A Course of Lectures ON PAIN,

AND THE

THERAPEUTIC INFLUENCE OF MECHANICAL AND PHYSIOLOGICAL REST IN ACCIDENTS & SURGICAL DISEASES.

Delivered in the Theatre of the Royal College of Surgeons.

By JOHN HILTON, Esq., F.R.S.,

SURGEON TO GUY'S HOSPITAL,
PROFESSOR OF ANATOMY AND SURGERY TO THE ROYAL COLLEGE OF SURGEONS.

LECTURE I.—(Part I.)

Mr. President and Gentlemen,—There are duties pertaining to every position in life, difficult of fulfilment; and there are duties attached to public professional life, from which, with whatever diffidence and incapacity they may be undertaken, no man can assume to himself absolutely the right to shrink. It is in this dubious but self-mistrustful spirit that I have ventured to accept, at the request of my colleagues in the Council of this College, this Professorial appointment—this, in my estimation, highly honourable professional appointment—whose requirements I must now proceed to carry out as best I can. To this end it is desirable to set out with a clear conception of its objects and intentions. I conceive that the institution of these addresses was based—firstly, on the wise recognition of the fact, that there is much in surgery which cannot be systematized—i. e., which cannot be conveyed from mind to mind in books, in systematic treatises, and, I had almost said, clinically, because the necessary grouping of like cases rarely accompanies clinical opportunities; secondly, on a natural anticipation of the progressive steps which might be foreseen in a scientific art cultivated with such intelligence, such laborious activity, and such an abundant supply of husbandmen as the present century has produced; and thirdly, on the opinion that some one of those numbers who had been actively engaged for a long period in extensive hospital practice would be a fitting exponent of surgical progress. Although it be true that the recent vague and indiscriminate use of the word "progress" has lessened its significance, nevertheless it can scarcely be doubted that the natural sciences have of late years received an impulse from more numerous cultivators, more exclusive research, and more accurate observation than has probably ever before been witnessed. Nor have those arts which, like ours, are based upon the physical sciences lagged in the march of improvement.

This, gentlemen, is my adopted conception of the original intention of this College in instituting the short course of Lectures on Anatomy and Surgery, which I have undertaken to deliver. How far I must fall short of responding to that intention I need not to be reminded; but I feel convinced that the attainment of even mediocrity is best secured by planting a high standard before the mind, with the determination of crossing as much of the intervening space as one has strength for. Nor need I seriously appeal to your indulgence for the manner of expressing my views, as I am sure that many of my listeners will readily appreciate the *facilis descensus* by which an habitual lecturer to students, whom he *can* presume to instruct, may be betrayed into treating an audience (whose high reputation and whose professional knowledge far exceed his own) as if he presumed to instruct them also; nor need I crave your consideration for my embarrassment in the selection of words and phrases appropriate to the ideas which I intend to convey.

"Nam neque chorda sonum reddit, quem vult, manus, et mens,
Poscentique gravem persæpe remittit acutum;
Nec semper feriet quodcunque minabitur arcus."

But, gentlemen, phraseology and diction have been to me minor considerations in comparison with the anxiety of choosing a subject which would be fitting for hearers so professionally distinguished. From time to time, you have listened with admiration to my predecessors in this chair, as they expounded to you the more recent advances in the pathology and symptomatology of the most important surgical diseases. Histology, general anatomy, and physiology have been so perfectly elaborated here as to bring under your attention their most recent discoveries; and it appeared to me that my forerunners had left to me, for the present, but one unoccupied department—namely, that of Therapeutics. By Therapeutics, however, I do not mean to imply the action of drugs, which more especially belongs to the department of the physician; but by this term I would imply the influence of what I may venture to call "Natural Therapeutics" in the cure of surgical diseases, and of which the chief is one so apparently simple as to make me almost apologize to you for selecting it, but which I hope to prove in the course of these lectures so important as to demand the very serious attention of every practical surgeon: I mean the subject of Rest—Physiological as well as Mechanical Rest.

Regarding this subject of Rest in its highest, closest, and best relation to mankind, and looking at it by the aid of my feeble penetration, I would, in all humility, remind you of God's ordinance that man should live by "the sweat of his face," as a punishment for his disobedience. Yet, with this behest, it pleased the Almighty, in the plenitude of His unspeakable benevolence, to consecrate the manifestation of His power and His goodness by permitting man's fatigue and temporary exhaustion to be followed by his greatest earthly solace, the blessing of rest and repose by calm and peaceful sleep; and this, too, as the immediate reward of his labour; nature devoting her best efforts, during this period of rest and sleep, to repair those powers which may have suffered exhaustion, to renovate his bodily strength, and to restore his mental vigour; and thus to make man's punishment a source of real and refreshing enjoyment, by enabling him to resume his labour in all the delicious vigour of a renewed existence.

Entertaining, as I do, the most exalted admiration of Nature's powers of self-reparation, when watching cases of extensive local injury, the thought has not unfrequently occurred to my mind, "What would have been the condition of man on earth, had it pleased the Creator to withhold from him this power of repairing his injured tissues?"

In my reflections on the subject of rest *as a curative agent*, my mind naturally reverted to that period of man's existence when it was the sole curative means of which he could avail himself. I could but picture to myself the timorous awe which must have been engendered in his mind by the first accident which happened to him. Let us imagine the effect upon our first parents when suddenly thrust out of the garden of Eden, deprived of the direct guidance of angels, and doomed to toil for their daily bread; with hands unused to labour, themselves inexperienced in the substitutes for unnecessary exertion and in the avoidance of local injury, and exposed to all the accidents of a precarious existence: let us try to realize the awe-stricken dismay, the doomful horror, which must have oppressed man's mind on the infliction of his first wound, his first experience of pain: the breach of surface, disclosing to his sight his blood, his life blood, flowing unceasingly, or leaping at sustained intervals, from its opened chambers; his sense of fainting, and his ultimately sinking on the earth under the foretaste of death; this, too, with the recent denunciation, "Thou shalt surely die," still ringing in his ears. Can words depict the hopeless anguish which he must have endured! But take the obverse view. See him awakening to life again, the stream of blood stayed, the chasm plugged, his strength revived, and day by day that wound—which he regarded as the badge of death, the vengeance of the Creator's wrath—narrowing and healing till it scarce appeared: what must have been his sense of gratitude to that all-gracious God who still vouchsafed such love to him!

I have adduced these observations for the purpose of illustrating the original promptings of Nature to man, in the alleviation of what must have necessarily befallen him in his altered condition. Pain was made the prime agent. Under injury, pain suggested to him the necessity of, and, indeed, compelled him to seek, rest. Every deviation from this necessary condition of rest brought with it, through pain, the admonition that he was straying from the essential requisite to his restoration; and he must have observed with astonishment the breaking asunder of the newly-formed tissue or the steady development into normal structure, which occurred in exact

accordance with the disturbance or rest to the parts, which the sense of pain had enabled him so accurately to regulate, and so beneficially to employ for his own personal relief and comfort.

That the Lord of all should have implanted in man, beyond the endowments which enable him to sustain his existence under the punishment of labour and the vicissitudes necessarily attendant on his sustentation, a recuperative power from the accidents and mischances of his precarious existence, appear to me to supply a too-lightly-considered evidence of His merciful and unspeakable love.

No doubt it would be easy to dwell or enlarge upon such a solemn and comprehensive consideration as the primordial power of man's structures to repair themselves; but I must not lose sight of the immediate object of my lecture. I would, therefore, now proceed to the subjects of growth and repair.

Growth is the antetype of repair, prefiguring the physiological capabilities of existing structures to repair themselves; and without diverging from the purport of these lectures, I may say that, so intimate is the association between rest and growth as to make them appear, on a superficial review, to stand to each other in the relation of cause and effect. Accurate observation of the animal and vegetable world certainly reveals their perpetual co-existence; and growth, as a rule, seems to proceed, *pari passu*, with physiological rest.

Mr. Ward* says: "All plants require rest, and obtain it, in some countries, by the rigour of winter; in others, by the scorching and arid heat of summer. Cultivators often fail in their attempts to grow certain plants from want of attention to this essential point. Thus most Alpine plants, which enjoy an unbroken rest under the snow for several months, are very difficult of culture in our mild and varying winters.

"The winter of 1850–51 was ushered in by some heavy falls of snow, with which I filled my Alpine case, giving the plants a perfect rest of three or four months, and with a most satisfactory result; the *Primula marginata*, *Linnæa borealis*, and other species, flowering much finer than usual. Many of these beautiful plants would, I am convinced, succeed well, if kept for five or six months in an ice-house.

"Plants, in hot countries, have their periods of rest in the dry season. In Egypt, the blue water-lily obtains rest in a curious way. This plant abounds in several of the canals at Alexandria, which, at certain seasons, become dry; and the beds of these canals, which quickly become burnt as hard as bricks by the action of the sun, are then used as carriage roads. When the water is again admitted, the plant resumes its growth with redoubled vigour."

The development of plants, maintained in a state of quiescence, and the application of this principle to the purposes of horticulture, are daily subjected to our notice.

Our great master in physiology, John Hunter, has not left this field unexplored, for we find, not only in his published works, but in others which hitherto have appeared only in manuscript, that the subject of rest occupied no inconsiderable portion of his attention. "Most plants," says he, "have their periods of growth and periods of rest, independent of variations of seasons, such as heat and cold. But in the same degree of heat a tree shall rest from growth and then begin to grow again. Perhaps this cessation from growth arises from the formation of seed going on in the plant, or endeavouring to go on, or the time it should go on in that plant; and when that period is over, the season being favourable respecting heat, it begins to grow again, producing what is called the second growth.

"Some plants close their leaves, others their flowers, at particular hours of the day or night; and with such regularity does this period of rest take place, that more than one vegetable physiologist has proposed to construct from them a floral clock."

We all know how eagerly rest is sought for by the lower animals, especially in periods of suffering from injury or disease,—how they endeavour to escape from the prying curiosity of man in order that the injury may be the more speedily repaired.

The value of rest and placidity in fostering the generation of that highly organized animal tissue which forms so large a portion of our staple food is well known to the stock-keeper and grazier. A homely illustration may be found in the fact that in infancy the child who sleeps much mostly thrives; and, *mutatis mutandis*, the observation is equally true, that the wakeful, restless child seldom displays the evidence of active nutrition; and doubtless all will admit that in infancy development is in its highest state of activity, and that the healthy infant passes the greater portion of its life in a state of rest and sleep. Growth—the renewal of some parts, and the fresh development of others—seems thus to claim as its helpmates sleep and rest.

Thus far I have endeavoured very briefly to point out the relation of rest to growth. I would now say a few words regarding the relation of rest to *repair*.

* On the Growth of Plants in Closely-glazed Cases, p. 11.

A CLINICAL EXAMINATION

OF THE

VALUE OF THE OPERATION OF TURNING IN LABOUR OBSTRUCTED THROUGH COARCTATION OF THE PELVIC BRIM.

By ROBERT BARNES, M.D.,

FELLOW OF THE ROYAL COLLEGE OF PHYSICIANS,
VICE-PRESIDENT OF THE OBSTETRICAL SOCIETY OF LONDON,
ASSISTANT OBSTETRIC PHYSICIAN TO THE LONDON HOSPITAL, PHYSICIAN TO THE ROYAL MATERNITY CHARITY, ETC.

Contracted pelvis; failure of the forceps; child apparently dead; delivery by turning; child restored.

CASE 4.—On the 8th of March last, my assistance was required by a midwife of the Royal Maternity Charity in a case of obstructed labour. The patient—aged twenty-six—had borne one child before; the labour had been very lingering, but the child lived. I found her at seven P.M. in labour at term. She was weakly and ill nourished; pulse feeble, and getting excited. She had been in labour twenty hours, the membranes had been ruptured eight hours, and it was represented that no progress of the head had been observed for five hours. The pains had flagged, and ultimately failed nearly entirely. I found the head lying on the brim in the transverse diameter, forehead to right ilium. The feeble contractions of the uterus had no effect in driving it into the pelvis. The apposition of the parietal bones to the pubis and promontory was very close; the occiput filled the left half of the brim, and in the right half a small space was left by the frontal part of the head. The head was movable, and, pushing it a little up, I took the dimensions of the pelvis. The conjugate diameter barely exceeded 3·25"; the two sides of the brim seemed equal, so that the circumference of the brim was kidney-shaped. On withdrawing my hand, I found it soiled with meconium. The fœtal heart could not be heard. Believing that moderate extractile and compressing force would bring the head through, I endeavoured to apply the Dublin forceps, but, owing to the shape and contraction of the pelvis, the instrument could not be made to lock. I introduced my left hand to turn. I passed this through the right half of the brim over the child's face. Laying my finger on the child's chest, I felt a pulsation, so feeble as to be almost doubtful as to its nature. Passing on, I felt the umbilical cord; there was no pulsation in it. I then seized the left knee. By upward counter-pressure effected by the right hand externally, pushing up the head, the leg was readily brought down. This being secured by a tape and held steadily, the evolution was completed by pushing up the head by the hand in the pelvis. The breech was soon born. The head was delayed at the brim; it entered in the transverse diameter, occiput to right ilium. By moderate force exerted for three minutes, pressure being maintained on the uterus externally, the head came through with a slight jerk. Whilst the head was in the brim, I felt a slight convulsive movement of the child's arm—the first sign of life. It was born breathless; not cyanosed; its limbs quite flaccid; no pulsation in the cord; a very feeble pulsation at the heart. At first, respiration was inexcitable. I kept up semi-rotatory movements for five minutes, with occasional cold aspersions over the area of distribution of the respiratory nerves. The heart began to beat rather tumultuously; respirations, at first imperfect and at long intervals, occurred. Presently, on dipping the body into warm water, and quickly withdrawing it, the child cried. Taken to the fire, it soon cried strongly, and seemed safe. It showed no depression on the skull or distortion, and the caput succedaneum was very small. The child was a female, of full size; head of ordinary dimensions. The placenta was cast in ten minutes.

Commentary.—This case afforded me unusual satisfaction. It exhibits the superiority of turning over craniotomy in a new light. Here was a child saved, which, if auscultation and the

escape of meconium had been relied upon as evidence of death, would, under the accepted doctrine, have had its head perforated. It may be urged that the child might have been delivered by natural pains stimulated by ergot. A first child had been born alive. But in women of defective organization, exposed to hardships of poverty and toil, it is not uncommon to find the parturient power exhausted by the first labour. I think it possible that energetic uterine contraction might have sufficed to drive the head through the pelvis. But uterine contraction, and, indeed, the woman's general strength, had long given way before the obstacle. Ergot might have failed to rouse them sufficiently, and would, in all probability, not have done so at all under half an hour. Moreover, there was the risk of rupture of the uterus. My experience is not favourable to the attempt to lash the *exhausted* uterus into spasmodic energy by ergotic stimulation. That half hour would have been a period of protracted suffering to the mother, and destruction to the child. The long forceps might have been successful. I entertain a strong bias—a prejudice, perhaps—in favour of delivery head foremost. But the forceps could only have been applied in the transverse diameter of the brim, one blade over the forehead, the other over the occiput, or a little obliquely. The grasp under such circumstances would have had the effect of causing the bi-parietal diameter of the head to bulge out more strongly against the promontory and pubis, increasing the disproportion and difficulty. The operation would have been severe, and the risk to the child great.

I am satisfied that the delivery by turning was, in this case, the least distressing to the mother; admitting of being performed with greater ease and celerity than any other. And if we recognise the right of the child to a share in the appliances of Conservative Midwifery, then must this case be regarded as one of leading importance.

Finsbury-square, July, 1860.

ON

A CASE OF MYELITIS AND EXTENSIVE SPINAL IRRITATION,

WITH

PARALYSIS OF THE LEFT LEG,

CURED BY THE ADMINISTRATION OF ERGOT OF RYE, AND THE EXTERNAL USE OF BELLADONNA.

BY C. R. BREE, M.D., F.L.S.,

PHYSICIAN TO THE ESSEX AND COLCHESTER HOSPITAL.

SUSANNAH C——, aged thirteen, admitted into the Essex and Colchester Hospital, Feb. 24th, 1859. The following history, down to the middle of November, was obligingly furnished to me by Mr. Johnson, the house-surgeon:—The account this girl gives of herself is, that she has never had any particular illness until about two years ago, when she had fever, which laid her up for about seven weeks; but she has always been delicate. On admission, she complained of feeling weak, and being unable to follow her employment, that of factory hand. She states that she has been accustomed to work in a room heated by steam pipes, and that she was in the habit of fainting away at her work. She dates her present illness from running home one day in the wet, when she felt pain in the side, with slight cough, which confined her at home for a few days, when she resumed her employment for two days. She had medical advice, but received no benefit. On April 22nd (whilst in hospital), she had a good deal of pain in the head and back; and, on coming up stairs, she fell and lost consciousness, and remained insensible from seven P.M. till two A.M., during which time she was very rigid, but did not struggle. On recovering sensibility, she felt pain in her left leg, which she attributed to rheumatism, and did not mention it until she discovered that she had lost all power of using it, and that it had no sense of feeling. About this time she complained of pain in her back. She was put under the influence of mercury, and had the tartrate of antimony ointment rubbed along the course of the spine. From this time she had attacks of insensibility about once a week, until Sept. 29th, when she left the hospital on five weeks' leave of absence, much improved in health. She was readmitted at the expiration of her term of leave, having had several of her old attacks, and was altogether not so well in health as when she went out. Her leg was now more particularly examined, when she was found to have neither motion nor sensibility from the knee downwards. The muscles and integuments of the thigh appeared scarcely, if at all, affected. She was ordered tonics and good diet, and the leg to be galvanized daily, and frequently rubbed with a rough cloth.

The patient came under my care about the middle of Nov., and I continued the above treatment for another fortnight, without any benefit.

On the 1st of December, I carefully examined the spine, which was extremely tender on pressure from top to bottom. So sensitive was this region, that she could not bear the slightest pressure without pain, and even gentle percussion made her cry out. This tenderness was more pronounced in the lower part of the dorsal region, just below the antero-posterior curvature in this situation, but not localized over any particular vertebra. She had had no fit since she came under my care. Her complexion was sallow and expression dull. She had never menstruated. Appetite bad; bowels regular; urine normal. The left leg was completely paralysed below the knee, and insensible to pain. She could use the flexors of the thigh so as to bend it partly towards the abdomen, and there was no anæsthesia above the knee. I ordered her to have two grains of ergot twice a day, and the spine to be rubbed night and morning with a liniment containing extract of belladonna; the leg to be well rubbed with the flesh brush, and the diet to be liberal, with moderate allowance of beer.

The only alteration in this treatment up to the 25th of January, 1860, was that of increasing the dose of ergot to four grains after a slight appearance of the catamenia on the 22nd of December. After the first fortnight she began gradually to amend, and the notes in my hospital book are—

Jan. 14th.—Begins to walk nicely *without assistance;* sensibility has in a great measure returned in the limb.

23rd.—She is daily gaining more use of the limb; spine is still very tender.

25th.—To be made an out-patient.

On the 5th of February she walked up to the hospital from her residence in the town. She had quite regained the natural use of the limb, but the spine still remained tender. To continue the liniment, but omit the ergot. I have not seen her since.

Remarks.—Now, what was the pathology of this interesting case? We have, in looking over the history, evidence of a lesion of the cerebro-spinal system and its consequences—loss of consciousness, tonic spasms, paralysis, anæsthesia. The spinal curvature I satisfied myself did not depend upon disease of the bony column, and the tenderness along this tract indicated, I think, inflammatory action, as well as that combination of symptoms, as Dr. Brown-Séquard has it, termed "spinal irritation." I think it will be admitted that the amendment was entirely due to the treatment. It was founded upon the above view which I took of the pathology of the case, and upon the principles so ably set forth by Dr. Brown-Séquard as to the therapeutical action of ergot and belladonna in the treatment of myelitis. In my notes of the lectures I heard delivered by that distinguished physiologist in Edinburgh I find the following:—

"Strychnine is almost useless in all lesions of the spinal cord, and especially hurtful in congestions of that structure. It acts by producing paralysis of the bloodvessels of the cord, and therefore in its lesions it can only increase the morbid effects. In sympathetic paraplegia, however, it is very useful. Ergot of rye and belladonna may both be used where strychnine cannot; they excite reflex action by acting upon the bloodvessels of the nerves."

In the summer of last year I saw two cases of myelitis with partial paralysis of the lower extremities, the bladder, and rectum, successfully treated with ergot of rye and belladonna by Professor Bennett, in the Royal Infirmary of Edinburgh, such treatment being founded upon Dr. Brown-Séquard's views. I therefore venture to draw the attention of the profession to the subject by the details of the present case.

Colchester, 1860.

ON THE

NATURE & TREATMENT OF DEFORMITIES.

BY HOLMES COOTE, ESQ., F.R.C.S.,

ASSISTANT-SURGEON TO ST. BARTHOLOMEW'S AND TO THE ROYAL ORTHOPÆDIC HOSPITALS.

NON-CONGENITAL DEFORMITIES.

IN passing from the consideration of congenital to non-congenital deformities, we leave the theories of fœtal development, or intra-uterine accidents, and enter on the domain of more recognised surgery.

I cannot select a better opportunity than the present for regretting that the term "orthopædic" should ever have been introduced in connexion with this department of surgery, for it conveys an idea of exclusiveness to which there is no claim, and raises in the mind of the student an ideal barrier, against which it offers a protest.

In the treatment of non-congenital deformities, orthopædic surgery shows only what may be done by time, patience, and gentleness, aided by mechanical appliances, or proper surgical treatment, after disease, accident, or general debility have done their worst. It claims not to be a specialty, except in so far that it requires some study and examination. But I may warn those entering upon practice that the whole subject is not to be "grasped" in a moment. It comprises a study of the morbid conditions of all the great systems of the body.

On the 24th of February, I saw a little child, aged four years, at the Orthopædic Hospital, of whom the mother simply stated that the left foot turned inwards in walking. And such was the case. The foot turned inwards, the inner border being raised, and the boy complaining, after walking, of pain in the sole of the foot at the junction of the metatarsal bones with the phalanges. But when he was put on a sofa the foot could be moved freely in every direction. It was only after most careful examination and comparison that a slight degree of tension of the tendo-Achillis was detected. The left limb was somewhat smaller than the right.

Now what was the explanation of this case? The child was suffering from one of those obscure affections of the spinal cord which manifest themselves by disturbing muscular equilibrium. This or that set of muscles exercises undue force, and the weight of the body is irregularly transmitted to the ground. In the case now before us, there was incipient contraction of the muscles of the calf, causing a tightness of the tendo-Achillis. It was not sufficient to be detected by cursory examination, and was more easily recognised by its results: what were they? In stepping forwards, the child pressed, with undue force, in consequence of the tense state of the tendo-Achillis, the anterior part of the corresponding foot against the ground; from this cause pain ensued, and the boy instinctively turned the inner border of the foot upwards and inwards, thus walking on the outer side. The next consideration was the seat of disease, which was certainly not the foot; and attention was directed to the spinal cord, as well as to the mouth, where the important process of dentition was yet going on, and exerting an influence over the whole system.

Some months ago, an aged gentleman consulted me in consequence of a tight condition of the tendo-Achillis, by which the weight of the body was thrown unduly forwards, and corns were formed, to his great annoyance, on the anterior and under part of the foot. In early or middle life, such an occurrence may be rectified by the division and elongation of the tendo-Achillis; in the aged, it may be alleviated by proper baths, and by processes of manipulation, by means of which the thickened epithelium is removed.

But disease or accident may be yet more local, and confined to a single articulation. Who does not still remember the frequent condemnation of diseased joints, and their subsequent amputation? Surgery has made a bold step in attempting the preservation of the limb by resection of the diseased joint. Nevertheless, we have yet to learn how much may be done by time and patience on the surgeon's part; how limited may be the real issue of disease; how capable parts so changed are of restoration.

I have three young patients under my charge suffering from strumous disease of the ankle-joint and tarsus. In the one case the heel is drawn up in the position of talipes equinus; in the second, the foot is thrown outwards in the position of talipes valgus; and, in the third, the integuments over the tarsus are red, inflamed, and suppurating. In order to treat these deformities, a general knowledge of the principles of surgery is required. Active disease must cease before we attempt the restoration of the displaced parts. The foot is drawn inwards or outwards instinctively, and for the patient's ease; and the division of tendons would be unscientific and reprehensible.

So, likewise, in cases of contraction of the knee-joint during disease the division of the flexor tendons of the ham is a proceeding both unscientific and futile. Why is the knee bent? To relax the ligaments which hold together firmly pressed the inflamed articular extremities of the bones. What would be effected by the subcutaneous division of the flexor tendons? Either absolutely nothing, or else to render the limb more unsteady and likely to reapproximate the diseased surfaces. It is a rule in orthopædic surgery to let morbid processes cease before we attempt the readjustment of displaced parts.

Faulty position may become the cause of non-congenital deformity; and this cannot be better illustrated than by reference to diseases of the spine. Lateral curvature! how often do we see it; how rarely is it mentioned! The very subject may be said to falter at the portal of legitimate surgery, in spite of the immense amount of misery which this affection is yearly causing.

Let me mention the following case, the particulars of which may be verified by anyone who chooses to call at the Royal Orthopædic Hospital, where the patient still remains:—

A young woman, the daughter of a professional man, became affected with double lateral curvature of the spine, after being left destitute. She was ultimately removed to a workhouse, where she remained bedridden and paraplegic for seven years. She was admitted into the Orthopædic Hospital above twelve months ago, under the care of Mr. Tamplin, by whose directions proper appliances were fitted to the distorted spine, and the limbs, which were contracted, were slowly extended. The patient can now walk, even some distance, by herself, and finds herself daily becoming stronger.

The treatment of non-congenital deformities implies, then, an extensive knowledge of the general principles of medicine, and proves clearly how impossible it would be to establish orthopædic surgery on the basis of a specialism.

Bridge-street, Blackfriars, 1860.

ON PERIODICITY AS A CHARACTER OF DISEASE.

By RICHARD HUGHES, M.R.C.S., L.R.C.P. Ed. (Exam.),
SURGEON TO THE BRIGHTON ORTHOPÆDIC HOSPITAL.

THERE is one disease—ague—of the phenomena of which periodicity is an invariable characteristic. There are other affections—the neuralgiæ and nervous headaches—which very frequently assume a regularly intermittent character. And, occasionally, in the course of various diseases a tendency to a periodical type is manifested.

Quinine and arsenic are specifics in ague. They are hardly less valuable in neuralgiæ and nervous headaches. And when, in works on Medicine, we meet with the remark that sometimes the symptoms seem to come on periodically, it is generally coupled with the statement that in these cases quinine will be found of the utmost value.

What is the *rationale* of these facts?

The cause of the regular periodic recurrence of the paroxysms of intermittent fever is discussed at length by Dr. Watson in the first volume of his Lectures on Medicine, p. 758. After passing in review the various theories that have been advanced to account for it, he leaves the subject as one altogether uncertain. Cullen's hypothesis as to the influence of diurnal habit he thinks the nearest approach to the truth; but admits that this will in no way account for the tertian and quartan types of ague. In this state of uncertainty, the peculiar poison—malaria—which causes intermittent fever has been generally regarded as the source of its periodical character. It is supposed to act in the way of a ferment in the blood; and the zymotic process set up by it is supposed to have its regular development and decline, the paroxysms being its effect on the nervous system when the process attains its acme. When other affections manifest a periodic type, it is supposed that their subjects have either had ague, or been exposed to malarious influences. On the other hand, quinine and arsenic are considered to be antidotes to the malarious poison, and thus to counteract its periodic influence in all affections which tend to assume that type. But I think I shall be borne out by general experience when I assert that periodic phenomena are manifested in many a case of neuralgia or other disease, where the hypothesis of malarious influence is altogether shut out. This theory, therefore, in itself *à priori* most improbable, must be at once rejected.

If, then, the periodicity of ague does not depend upon the peculiar poison which occasions it, does it depend upon the peculiar portion of the organism which that poison affects? This is universally acknowledged to be the nervous system. I would agree with this view, but would still farther limit it to a particular division of the nervous system—the *sympathetic*.

Let me place one after another some of the principal phenomena of the cold stage of ague, with those produced by galvanization of the sympathetic in the neck.

In the cold stage of ague "the patient fee's chilly; the blood deserts the superficial capillaries; he grows pale, his features shrink, his skin is rendered dry and rough; his respiration is quick and anxious; his pulse frequent sometimes, but feeble: all the secretions are usually diminished; he may make water often, though generally he voids but little, and it is pale and aqueous; his bowels are confined, and his tongue dry and white."—(Watson, *op. cit.*, p. 735.)

Let Dr. Brown-Séquard now tell us the result of his galvanizing the sympathetic in the neck. "The pupils are dilated; the eyelids wide open; the globes protruding. Blood deserts the superficial vessels; secretion is diminished or checked; temperature and all vital functions lowered."—(Lecture IX., in THE LANCET, vol. ii. 1858.)

It is clear from the above that the essential phenomena (diminished afflux of blood to the surface, check of secretion, and lowering of temperature) of the cold stage of intermittent fever may be produced artificially by excitation of the sympathetic nerve, and are dependent upon the contraction of the bloodvessels thereby occasioned. The hot stage is no less explicable as the natural reaction of the vessels to even beyond their normal calibre, and finds its precise analogue in the phenomena which result from section of the sympathetic in the neck.

It would appear from the above that the sympathetic system is that part of the organism specially affected by the malarious poison, and that the phenomena of ague depend on a periodic excitation of it by the poison, followed by an equally immoderate reaction in the opposite direction, which latter at length settles down to the equilibrium of health. And upon this hypothesis the beneficial influence of quinine and arsenic in this disease receives its perfect *rationale*. For these are well known as (to use Dr. Handfield Jones's term) "toners of the vaso-motor nerves"—i. e., of the sympathetic, and their tonic influence thus exerted will obviously render it capable of resisting the morbid irritation of the malarious poison—a view which is confirmed by the well-known fact that quinine is no less valuable as a preventive than as a curative agent against this malady.

But will the fact of the sympathetic system being the seat of the phenomena of ague help us to explain the periodic character of these phenomena? I think it will. Let us consider the actions of the heart and the uterus, two muscular organs supplied mainly or entirely by this nerve.

What is the cause of the rhythm of the heart? It cannot be the stimulus of the blood, or of anything else within the body; for a frog's heart will continue its regular systole and diastole for some time after its removal from the thorax. The only motive agency then left to it is that of the sympathetic ganglia, which are imbedded in its substance. To these nervous centres we are therefore shut up in our inquiry as to the heart's action; but the influence of these centres is neither continuous nor occasional, but rhythmical—i. e., periodic.

The uterus resembles the heart in its also possessing numerous sympathetic ganglia imbedded in its muscular walls, and in entire independence of the cerebro-spinal system in its movements. Is there anything here periodic? We immediately think of the regular monthly recurrence of the phenomena of menstruation, and of the act of parturition, which (as first shown by Dr. Tyler Smith in the pages of THE LANCET) is determined by the menstrual periods, being normally due on the 281st day after the commencement of the last menstruation.*

From the marked periodicity apparent in the actions of these two organs, exclusively animated by sympathetic ganglia, we seem justified in the conclusion that a periodical evolution of nerve-force is characteristic of this division of the nervous system; and if this be the case, we cannot be surprised that it should give its peculiar character to phenomena resulting from the effect of a poison upon itself. Thus the periodic character of the paroxysms of ague is reduced under the more general law of the periodic character of all phenomena, morbid or natural, over which the sympathetic system presides, dependent upon the endowment of this system itself.

It follows that periodic phenomena appearing in the course of any other diseases must be attributed to an involvement of the sympathetic system in their morbid irritation; and thus the beneficial effects of quinine and arsenic in all such cases fall under the general law of their toning influence upon that system. I may instance the most common affection which inclines to a periodic type—nervous headache. Dr. Symonds, in his admirable Gulstonian Lectures upon this subject, shows by many arguments that the vascular nerves (i. e., sympathetic) of the brain and skull are the seat of pain in this affection, and, in common with general experience, regards quinine and arsenic as the sheet-anchor in its treatment.

I venture to submit that the following original conclusions are established by the preceding considerations:—1. That ague is an affection of the sympathetic system. 2. That its periodical character is dependent upon a periodicity impressed upon the sympathetic system, and manifested in all the phenomena, morbid and natural, over which it presides. 3. That the *modus operandi* of quinine and arsenic in ague and other periodical affections is the toning influence exerted by them on the sympathetic nerve. The doctrines also of the dependence of the heart's movements on its imbedded ganglia, and of the menstrual periodicity as the determining cause of parturition, receive no slight corroboration; and our instinctive recourse to quinine and arsenic, whenever periodic symptoms manifest themselves, receives alike its *rationale* and its establishment.

Brighton, July, 1860.

* This theory should be more widely carried out in obstetric practice. I have been delighted at the exactitude with which it has enabled me to predict even the day of delivery. The advantage of such a pre-knowledge, whether to patient or practitioner, is immense.

A Mirror

OF THE PRACTICE OF

MEDICINE AND SURGERY

IN THE

HOSPITALS OF LONDON.

Nulla est alia pro certo noscendi via, nisi quam plurimas et morborum et dissectionum historias, tam aliorum proprias, collectas habere et inter se comparare.—MORGAGNI. *De Sed. et Caus. Morb.*, lib. 14. Proœmium.

KING'S COLLEGE HOSPITAL.

REMOVAL OF NECROSED BONE, WITH SUBSEQUENT EXCISION OF THE KNEE-JOINT, IN A LAD AGED FOURTEEN; RECOVERY.

(Under the care of Mr. FERGUSSON.)

A CONSIDERABLE period has elapsed since the subject of excision of joints was thoroughly illustrated by the record of numerous cases in our "Mirror," and since then the operation has met with the attention that its importance demands, and is now frequently resorted to in suitable and well-selected instances in many of our metropolitan and provincial hospitals. If we have not recorded all those in which it has been done in London, it is because our space would not allow it; but we to-day give the details of nine cases of excision of the knee, taken indiscriminately, for the purpose of showing the nature of their progress and final result, and of again drawing attention to the subject generally. The consideration of excision of the hip-joint we shall reserve for another occasion.

With respect to the knee, we refer with much satisfaction to the memoirs of Mr. Butcher, of Dublin, who has so zealously laboured to advance this branch of surgery, of Mr. Humphry, and of Mr. Price, who still more lately has been busy in the same field of research. We feel satisfied that if correct statistics of the knee could again be collected, they would show a very fair amount of success, for the reason that the operation is better understood now than when first revived by Mr. Fergusson some years back. It is now undertaken with more confidence, and its simplicity is found to encourage those surgeons to repeat it who have once put it into practice. We regret to say, however, that in two or three of our hospitals, amputation still appears to be the rule, even in patients whose knees could be excised with every possible advantage. As a set-off to this, there is a disposition to excise the hip in preference to the knee, on the ground that it is likely to prove a far more successful measure.

To speak of particular points in connexion with excision of the knee, it seems to be questionable whether the operation should be resorted to in the young, because the affected limb, after the loss of its main joint, does not grow proportionately with other parts of the body. This has been found to be true in some cases; nevertheless, the shortened limb with a high-heeled shoe is preferred by the patients themselves to going about with a single leg. It would appear that there is scarcely a disease of the articulation, excluding of course any-

thing in the shape of malignancy, for which excision may not be practised. It may be done for even extensive necrosis; indeed we can call to mind other instances besides the subjoined wherein Mr. Fergusson adopted this mode of treatment with decided advantage; and we have the recent experiments of M. Ollier, of Lyons, to prove that if the periosteum be left entire in the vicinity of joints, it will reproduce bone.

At one time the patella was allowed to remain, because it added support and strength to the knee; but subsequent experience has tended to show the advantage of its removal. Its retention is still a subject for consideration.

There are several examples of excised knees at the present time under treatment, independently of those which we bring forward to-day. Amongst them is a patient in King's College Hospital, upon whom Mr. Henry Lee performed the operation on the 30th June; and another, a girl in the London Hospital, operated upon by Mr. Curling on the 21st June. To show the rapidity with which the parts unite after excision, we may mention that a patient whose elbow was excised by Mr. Curling on the 28th of June by means of the longitudinal incision, had the wound perfectly united within a fortnight. We have known such speedy results to occur in the knee.

The great inducement to perform excision of the knee-joint at the present day is the fact that the per-centage of deaths consequent on this operation is much less than that attending amputation; a reference to the memoirs of Mr. Butcher and Mr. Price will satisfactorily prove the truth of this. At Guy's Hospital, Mr. Bryant has shown, the per-centage of deaths in *pathological* amputations is 1 in 5·5, the same as in excision of the knee; whilst that in *chronic disease* is 1 in 7, being somewhat more favourable. The statistics of amputations elsewhere, taken generally, will not give such favourable results as these.

The notes of the following case were furnished by Mr. Francis Mason, late house-surgeon to the hospital.

E. H——, aged fourteen, was admitted Dec. 27th, 1859. He stated that in May, 1858, he was being carried down some steps, when his knee came in contact with the iron railings; the joint was slightly painful at the time, but he thought little of it, and it improved by fomentations and rest. About six weeks after the accident, however, he experienced a good deal of sharp, shooting pain in the joint, with considerable swelling. He sought medical advice, but no remedies appeared to have a beneficial effect upon it. This state of things continued three months, when an abscess was discovered to exist in the joint, which was opened, and an immense quantity of matter evacuated. This gave him some temporary relief, but the knee had now become considerably flexed, obliging him to adopt crutches to enable him to get about. He continued much in this state up to the time of admission.

The patient is a pale, delicate, strumous-looking boy. He lies on his left side; the thigh being flexed on the trunk, the leg on the thigh. There are several sinuses in the region of the joint leading to bone; one, on the inner and lower part of the thigh, leads to an extensive bare surface of the femur. The patient has no brothers or sisters; father and mother healthy. No lung affection; other functions of the body natural.

Jan. 7th.—The patient having been narcotized, Mr. Fergusson proceeded to remove a piece of the shaft of the femur about six inches in length, by an incision of two inches, made at the lower end of the thigh. The removed portion was easily detached, and found to be necrosed.

8th.—Has had a good night; complains of slight thirst. Limb rather uncomfortable; pulse 106.

10th.—Wound suppurating healthily; the patient says the limb is not so painful as before the operation; appetite good.

Feb. 2nd.—Has gone on well since last report; eats, drinks, and sleeps well; is anxious to have his leg put straight.

March 3rd.—To-day the operation of excision of the knee-joint was performed by Mr. Fergusson, the patient being under the influence of chloroform. The H incision having been made in the integuments, sufficient of the ends of the femur and tibia was cut off to bring the limb in the straight position. The patella was removed. There was very little hæmorrhage during the operation, no vessel requiring a ligature. A splint having been applied, the patient was sent to bed.

4th.—Has had a restless night, the limb having been very painful, but the pain has been much mitigated by an opiate draught; pulse 120.

5th.—Is much better to-day in health, but the leg continues to give great pain at intervals. To have three grains of sesquicarbonate of ammonia in an ounce of decoction of cinchona every four hours.

10th.—Wound discharging healthily; no bad symptom; appetite good; bowels regular; all pain has disappeared.

20th.—Is still going on well, the wound discharging a thin, serous fluid, mixed with pus; splint removed; the joint seems firm; splint reapplied.

May 1st.—Gutta-percha splint applied to the back of the leg.

9th.—Discharged to go into the country.

ST. THOMAS'S HOSPITAL.

SIX CASES OF EXCISION OF THE KNEE-JOINT, PERFORMED IN 1859, FOLLOWED BY RECOVERY IN FIVE.

(Under the care of Mr. SOUTH, Mr. SOLLY, Mr. LE GROS CLARK, and Mr. SIMON.)

THE operation was performed in pretty much the same manner in all of the following cases, as we learn from Mr. Allingham, Surgical Registrar to the hospital, to whom we are indebted for their brief details. Chloroform was given, and the joint was opened by an elliptic incision, which included the patella in the flap. The ends of the bones and the joint surface of the patella were removed by Butcher's saw, and the limb was put up in a slightly bent iron back splint. Liberal diet and stimulants were given, and all the patients had cod-liver oil and some preparation of iron.

CASE 1.—A strumous, delicate man, aged thirty-seven; had disease of the sternum and ulceration of the cartilages of the left knee-joint. He suffered much pain, his rest was disturbed, appetite bad, and his health generally broken. Two sinuses, connected with the joint, discharged a watery pus. Excision was performed by Mr. South Nov. 5th, 1859. The cartilages were found extensively eroded, and the head of the tibia secondarily affected to a slight extent. At first, after the operation, his health improved; the wound united in part, and healthy suppuration was established: but towards the end of February diarrhœa of a very obstinate character set in, with night-sweats. By the end of March his condition was by no means satisfactory; there was no apparent union of the bones, his diarrhœa continued despite the use of various astringents, he was sick at times, and his appetite was capricious. The wound did not discharge excessively, and it looked healthy. From this time there was but little alteration in his condition, and certainly none for the better, and he went out, at his own particular request, on the 2nd of June. There was then no amount of bony union, the wound was discharging a tolerably healthy pus, and he did not suffer pain. He died a short time after leaving the hospital.

CASE 2.—A very strumous-looking boy, aged six, with chronic ulceration of the cartilages of the right knee-joint, the tibia being dislocated backwards. He was hectic; suffered much pain; and there was a discharging sinus connected with the joint. Excision was performed by Mr. Solly on the 9th of November, 1859. The cartilages were extensively eroded and the ligaments destroyed. After the operation he improved at once, never having a bad symptom. The wound healed; he gained health and strength, and left the hospital with scarcely any perceptible shortening of the limb, being able to walk with ease and comfort.

CASE 3.—A delicate, scrofulous boy, aged eight, with chronic ulceration of the cartilages of the knee-joint; free discharge from three sinuses. He was hectic, and suffered much pain. Excision was performed on the 5th of March, 1859, by Mr. Solly. There was considerable erosion of the cartilages, and false membrane in large quantities; but no disease of bone. The wound united in great part by first intention; his health improved; he slept well; and his appetite was excellent. He left the hospital quite stout and well; the limb was only half an inch shorter than its fellow, and he could walk with ease and rapidity.

CASE 4.—A strumous boy, aged twelve, with long-standing suppuration in the knee-joint and several discharging sinuses. He was much out of health, and suffered greatly. Excision was performed by Mr. Le Gros Clark on the 12th of March, 1859. The cartilages were found to be in great part removed, and there was some secondary disease of the head of the tibia. A considerable portion of the wound united by primary intention. He slept well, and took his food with relish. During the progress of the case he had a slight attack of erysipelas, and an abscess formed over the ankle. Despite these drawbacks, the result of the case was favourable; and when he left the hospital there was firm bony union, and only a small portion of the wound uncicatrized. The limb was but slightly shortened.

CASE 5.—An emaciated, sickly girl, aged six, with scrofulous disease of the knee-joint. She had suffered much; slept badly; and had but little appetite. Excision performed Nov. 12th,

1859, by Mr. Simon. The cartilages were eroded, and there was softening of the end of the femur. For a few days after the operation her condition was very critical, but when suppuration was established she improved, slept better, and was more cheerful. She was sent from the hospital to the Margate Infirmary. There was firm bony union, and only a slight amount of ulceration in the line of the incision when she left St. Thomas's.

CASE 6.—An unhealthy, pasty-looking man, aged twenty-three, with long-standing disease of the knee-joint. After his admission two incisions were made, and considerable quantities of pus escaped. He did not improve much, and excision was performed Nov. 19th, 1859, by Mr. Simon. There was extensive ulceration of the cartilages, and superficial caries, dependent upon a small sequestrum in the head of the tibia. He improved in health after the operation, and a good deal of the wound united by first intention. A counter opening was required, when suppuration occurred, to give exit to some retained pus. When he left the hospital there was firm union of the bones, he was able to get about, and was in very fair health.

ROYAL FREE HOSPITAL.

STRUMOUS DISEASE OF THE KNEE-JOINT; EXCISION; RECOVERY WITH A SOUND, ANCHYLOSED, AND USEFUL LIMB.

(Under the care of Mr. GANT.)

THE two following cases sufficiently speak for themselves. They make up the nine mentioned in our previous remarks, and with but one unsuccessful result out of that number:—

John P——, aged eighteen, was admitted on Oct. 19th, 1859. The patient is a strumous, unhealthy-looking subject; a coal-porter. While following his occupation about four years and a half ago, a large piece of coal fell on his right knee, and occasioned pain for some days, after which he resumed his work, although the joint was much swollen, and still painful. He continued to work during the ensuing three months, the joint remaining swollen, and latterly the hamstring muscles contracted so as to draw the limb backwards to nearly a right angle with the femur. He then went under treatment at the Westminster Dispensary for four months, during which period the muscles gradually drew the heel up to the buttock. He afterwards resorted to St. George's Hospital, where he experienced some relief, under the care of Mr. Hawkins, and was discharged at the end of three months. Thence he went to St. Mary's Hospital, and was a patient for more than eight weeks, under the care of Mr. Lane. Subsequently, at the Westminster Hospital, he remained for ten months, under the care of Mr. Guthrie, when he was discharged. After six months' suffering, he was again admitted into the same hospital, and continued under treatment for two months more. At length he sought relief at the Middlesex Hospital; but having remained for three months, without any improvement, he left the hospital. Eventually he came to the Royal Free Hospital, and was placed under the care of Mr. Gant on the 19th of October last.

The joint was found to be uniformly swollen, but not so much as to obscure its outline. A thin unhealthy discharge issued from two or three sinuses which led into the joint, and the patient was much emaciated. His general health having been renovated so far as the local disease and lengthened illness allowed, Mr. Gant excised the joint under chloroform on Oct. 31st. By a transverse and slightly curved incision below the patella, and extending from one condyle of the femur to the other, the joint was fairly laid open. The patella was then removed, although in a sound condition, and a slice of the femur and tibia, both of which were partially bare of cartilage, were sawn off. The femur was most diseased, and a second slice was taken from it, until the rose-coloured bleeding bone was reached. All the diseased bone having been thus got rid of, the surfaces of the femur and tibia were seen to be well adjusted to each other, and the edges of the incision brought together with sutures of fine silver wire. No vessel required ligature. The limb was at once placed upon an extended Macintyre splint, of such length as to allow of the femur and tibia to be in easy apposition without being much pressed together by the foot-board. Broad strips of adhesive plaster were then drawn around the limb, a splint applied above and below the knee, and a bandage from the foot upwards and from the thigh downwards, leaving the knee uncovered, around which were placed strips of wet lint. No side splint was used.

No unfavourable or unusual symptom followed the operation. On the eighth day some hæmorrhage occurred, which was arrested by the application of ice.

Dec. 17th.—The splint was removed, and union found to have taken place; the limb was replaced; general health much improved.

Jan. 2nd.—Union was more firm; health continues to improve, and his trembling agitation has subsided.

27th.—Union more firm; limb replaced on a short posterior splint.

From this time the patient sat up in bed daily, but it was deemed advisable not to allow him to try the leg much. When the weather became warmer, he took gentle exercise, with his leg suspended in a sling. He left the hospital with a sound and useful limb, having been allowed to remain an in-patient until he could be admitted into the Margate Infirmary to thoroughly re-establish his health.

EXTENSIVE CARIES OF THE RIGHT KNEE-JOINT; EXCISION; RECOVERY, WITH FIRM ANCHYLOSIS, IN TWO MONTHS.

(Under the care of Mr. GANT.)

Elizabeth D——, aged thirty-three, married, on September 29th, 1853, while walking down a gentle descent, slipped over some rotten pears, and caught the heel of her boot in a grating, whereby the knee was wrenched inwards, causing severe pain. Considerable swelling ensued, which never subsided; but the articulation continued movable for three months, at which time, the patient having scrubbed two or three rooms, more intense pain attacked the joint, which soon became fixed. This crippled state continued without any improvement, although leeches and blisters were used from time to time after the injury. The general health remained unimpaired up to October, 1858, when she experienced severe pain, apparently rheumatic, extending throughout the whole limb. This subsided under treatment, but the practitioner to whom she had last applied candidly told her that the case was incurable otherwise than by amputation; and by his recommendation she came to the Royal Free Hospital on September 12th, 1859.

The joint was considerably and uniformly swollen. Three sinuses, one in the popliteal space, discharged a thin ichorous matter, and the limb was bent towards the buttock, but was movable with a grating noise, such as plainly bespoke destruction of the articular surfaces. The constitutional irritation was proportionate to the six years' suffering the patient had endured. She was not so much emaciated, but passed sleepless nights, trembled, and was always in tears.

On October 19th, chloroform having been administered, Mr. Gant excised the joint by making the same incision as in the preceding case. The head of the tibia was sawn off to the depth of half an inch; a thicker portion of the femur was taken away, and the cancellated structure scooped out for more than an inch, so as entirely to remove all diseased bone. The patella was also removed. The subsequent steps of the operation and adjustment of the splint were precisely similar to those adopted in the o her case.

The general health improved rapidly after this operation. The patient gained flesh and spirits, and progressed without a single unfavourable symptom. At the end of eight weeks the splint was finally removed, and so firm was the anchylosis that no other was applied, the limb being merely bandaged from the toes upwards to prevent any tendency to swelling on first moving about.

The patient could rest her whole weight on the operated limb, and she left the hospital in time to eat her Christmas dinner at home.

CLINICAL RECORDS.

SENSATION OF CRACKLING WITHIN THE JOINTS.

A FEMALE, aged thirty-six years, but looking much older, a housemaid, of spare frame and short stature, was admitted into St. Bartholomew's Hospital on the 6th of February last, under Dr. Farre's care, with general pains about her limbs and joints. She has been a sufferer from rheumatoid arthritis; and from her family history it appears that her father and uncle were subject to the same disease, or to gout, but which, she says, was rheumatic gout. Besides the general pain and distress present on her admission, she had a sensation of crackling within all the affected joints, especially well marked at the under part of the right knee, in the right ankle, in the left

groin, and in front of the hip-joint; and at times she seemed as if she had not the power to move her limbs. This crackling of the joints commenced nine weeks before she entered the hospital, although she has suffered from her other affection for upwards of five years, with lameness of one of her legs from the same cause. She was examined by Mr. Lloyd to see if there were any loose cartilages, but none could be found. Dr. Farre believed that this singular condition must be owing to an altered secretion of the lining membrane. By the 13th of February she was much relieved from pain on the outer side of the hip by the local application of belladonna to the sacrum, and, in a few days afterwards, all this crackling wholly disappeared, and she began to improve in every way under treatment, although she still remained a little sore and lame.

It may be observed, that the disease itself under which this patient was suffering is common enough; but the peculiar sensation experienced of crackling within several of the joints is a striking feature, and ought not to be a rare circumstance when the great number of pathological states of the synovial membrane are taken into consideration. That Dr. Farre's opinion is the correct one would seem to be proved by the result of the treatment.

Some weeks later, a second example of this peculiarity occurred at University College Hospital, under Mr. Erichsen's care. The patient was a middle-aged man, with partial anchylosis of the elbow, the result of inflammation. He had been the subject of rheumatism eight years ago, and for the last two years has been unable to extend the left arm, although he can slightly flex it. There was clearly some effusion into the joint, and a very distinct crackling sensation, which Mr. Erichsen stated to be the result of it. In effusion into the sheaths of tendons, and in bursæ near joints, this crackling feeling is observed, and gives the idea, he remarked, of bands forming in different directions. It is noticed also in bursæ, when there are small bodies mixed with the fluid. Without giving the patient chloroform, the arm was flexed and extended with but little force, and, subsequently, not only was the position of the arm improved, but much useful motion was gained, with disappearance of the crackling.

PROTRUSION OF BONE BY GROWTH FROM THE END OF A STUMP.

WHEN limbs have been submitted to amputation in childhood, it not unfrequently happens that, as the individual grows, so does the bone elongate itself in a proportionate manner, and then protrudes through the soft parts, after a time forming a conical stump. Instances of this kind we have already brought under the notice of our readers; and that the bone does grow is believed by many surgeons of high authority, amongst whom are Mr. Stanley, Mr. Curling, and others. An undoubted example of it was recently admitted into Guy's Hospital under Mr. Hilton's care. The patient was a healthy-looking girl, of about the age of eighteen years, whose right arm had been amputated in childhood. The stump healed kindly, and remained healthy for some years, when it gradually became conical, and from the point protruded the end of the humerus. Its appearance was like an exaggerated nipple somewhat drawn out. There was no retraction of muscular substance here, but clearly an outgrowth of bone. The soft parts were tender in spots, as if from the pressure on or stretching of some of the nerves; in fact, they could be marked by pins. The rest of the stump was healthy. Chloroform was given on the 24th of July, an incision was made on either side, freely laying open the stump, and three inches of the bone sawn off; the parts were brought together, and the girl is now doing very well.

WINE IN PNEUMONIA.

THE great value of wine, brandy, and other stimulants, in almost any disease of an asthenic character, or even in forms of acute disease which take on a low or asthenic type, is constantly observed in hospital practice. It was strikingly manifested in a man thirty-six years of age, who was admitted into St. Bartholomew's Hospital on the 16th of April, under Dr. Kirkes' care, with pleuro-pneumonia of the right lung. He was brought in in an exceedingly low and feeble condition, with pulse 136, small and weak, and soft in character. Consolidation of the lower part of the right lung was discovered, together with friction-sound. He was put on small doses of grey and Dover's powder, and three ounces of wine. This brought the pulse down to 124 next day, and the wine was increased to six ounces in the twenty-four hours. On the 18th the pulse was 100, and on the 19th 98; and the symptoms generally became alleviated. On the 21st, two ounces of brandy were ordered in addition to the wine; and by the 23rd the solidified lung was undergoing resolution, fine crepitation being heard over the lately condensed portion. Dr. Kirkes reduced the brandy to an ounce per diem, continuing the six ounces of wine; and the man got so much better that he desired more food. Subsequently to this his recovery was gradual and complete; the wine and brandy being apparently the chief agents in bringing about a restoration of the normal condition of the lung. The patient was a labourer, and a strong man when well; but depletion would have proved a fatal measure. In London, at any rate, the majority of such cases require a stimulating and supporting treatment throughout.

THE FREQUENCY OF HEMIPLEGIA.

THE frequency with which the occurrence of hemiplegia is witnessed in our hospitals shows an amount of disease in the bloodvessels of the brain amongst the industrial classes that could hardly be anticipated. Owing, no doubt, to atmospheric influences, cerebral congestions are probably more common at particular seasons; for we notice an unusual number of cases admitted into one or other of our hospitals at such times. Thus, on the 23rd of January, we counted some seven or eight cases in the male and female wards of Dr. Farre alone, at St. Bartholomew's Hospital, nearly all being seized with paralytic symptoms, we may say comparatively within a few days of each other. They were not very severe cases, and some were first attacks. We select the following, which we have condensed from the notes of Mr. Edmond Strickland, one of the clinical clerks:—

James R——, aged thirty-two, was admitted on the 23rd January, with hemiplegia of his left side. He is a stout, healthy-looking man, muscular and thick-set, of plethoric aspect. He was quite well on the 22nd, ate his food as usual, and went to bed quite comfortable. At half-past one in the morning of the day of admission an extraordinary sensation came over him, which he experienced particularly in the left side. He can move his left arm very slightly, but its temperature is diminished, and when he gapes (which he does very frequently) the arm is drawn up; it is otherwise powerless, but sensation is nearly perfect, and there is no rigidity. The left leg he can move quite well. The tongue is drawn to the affected side, and the right side of the face feels stiff. He had slight pains in the head, between the shoulders, and over the loins for the last week, but so mild that he took no notice of them. About eight years ago, whilst drinking a glass of ale, he was threatened with similar symptoms; the face was drawn to one side, and the ale ran out of his mouth; the face felt stiff for about an hour, and then all the symptoms passed off, not recurring again till the present time. Now his vision is also affected; articulation is difficult; there is no rigidity of the left side, and very slightly diminished sensation. He is usually of a costive habit.

In a case like this the symptoms are slight and mild, and would seem to favour the belief that there is no effusion into the substance of the brain, but probably a mere local congestion. Dr. Farre treated him with mild stimulants of carbonate of ammonia in camphor mixture after the bowels were relieved.

On February 13th, we learned that the patient had improved so much, being able to move his arm about, &c., that the ammonia was omitted on the 10th, when contraction of the arm returned. It was therefore resumed, and he again improved in every way up to the 18th, when matters seemed to be stationary. Dr. Farre believed that the man required the benefit of air and exercise out of doors, and he was therefore discharged.

ROYAL SOCIETY.

SIR BENJAMIN C. BRODIE, BART., F.R.S., PRESIDENT.

ON THE FREQUENT OCCURRENCE OF PHOSPHATE OF LIME, IN THE CRYSTALLINE FORM, IN HUMAN URINE, AND ON ITS PATHOLOGICAL IMPORTANCE.

BY ARTHUR HILL HASSALL, M.D. LOND.

(*Communicated by* Dr. SHARPEY, Sec. R. S.)

IN 1854 I submitted to the Royal Society a paper, "On the Frequent Occurrence of Indigo in Human Urine." This communication, which was published in the "Philosophical Transactions," attracted considerable attention both at home and abroad. The singular fact of the frequent presence of indigo in

the urine, first announced by me, has since been amply confirmed by a variety of observers. I have now to place before the Society some investigations in relation to the not uncommon occurrence in human urine of *phosphate of lime*, as a *deposit*, in a well-marked *crystalline* form.

When the earthy phosphates are treated of by writers, in connexion with the urine, they are usually described collectively, and it is seldom that each kind of phosphate is particularized, and yet there are several which may occur either separately or together. The phosphate of ammonia and magnesia, or triple phosphate, is often specified, but rarely is phosphate of lime separately mentioned, and phosphate of magnesia scarcely ever; and yet phosphate of lime is very frequently present as a deposit in urine, much more so, indeed, according to my experience, than the triple phosphate, excluding those cases of the occurrence of that ammoniacal phosphate, arising from the decomposition of the urea of the urine subsequent to its escape from the kidneys. Even in those few cases in which phosphate of lime is specially mentioned, it is described *usually* as mixed up with the other phosphates, and *always* as occurring in the *amorphous* or *granular*, and never in the crystalline state; further, no peculiar importance is attached to it, as contrasted with the magnesian phosphate.

Even one of the most recent writers on the urine gives the following description of the physical characters of deposits of phosphate of lime in urine:—"Deposits of phosphate of lime," he states, "as usually occurring in the urine, and mixed with magnesia, are always white and amorphous, under the microscope appearing in granules, sometimes of a greenish tinge, which exert a refracting action upon light. *Crystallized deposits of this substance have not been observed.*"

I now propose to show, first, that there is a crystalline deposit, the crystals composing which will be described hereafter, which does really consist of phosphate of lime; second, that it is of frequent occurrence in human urine; and third, that it is of greater pathological importance than the deposits of triple phosphate.

I would first remark that I have for years been acquainted with the fact of the occurrence of crystalline phosphate of lime in the urine, and I have referred to it in THE LANCET of 1853, and also elsewhere. I should now remark, however, that the statement made by me as to the composition of the crystals, has hitherto been based upon their *qualitative* analysis only, and therefore was not so completely conclusive and satisfactory as could be desired. Until recently I had not made any *quantitative* analyses: these I have since been enabled to perform, and I now furnish the results of the chemical examination of four samples of the deposit.

First Sample.—Filtered from the urine of twenty-four hours; mixed, as ascertained in the first instance by means of the microscope, with a very minute quantity of *triple phosphate*.

Bibasic phosphate of magnesia	0·15
Bibasic phosphate of lime	1·85
	2·00

Second Sample.—Filtered from urine after the lapse of a day or two; mixed with a small quantity of *triple phosphate*.

Bibasic phosphate of magnesia	0·47
Bibasic phosphate of lime	6·18
	6·65

Third Sample.—From urine of twenty-four hours, after the lapse of several days. Admixed with much triple phosphate, as shown first by the microscope, and afterwards by the chemical analysis.

Bibasic phosphate of magnesia	4·30
Bibasic phosphate of lime	5·41
	9·71

Fourth Sample.—Separated from six ounces of fresh urine. Deposit very pure.

Bibasic phosphate of lime	1·96
No phosphate of magnesia.	

Now the admixture of the phosphate of magnesia in the first three samples was due solely to the fact, that the phosphate of lime, deposited at first in the pure state, was allowed to remain in the urine until decomposition had commenced, and the phosphate of magnesia and ammonia had, in consequence, become formed. Deposits of phosphate of lime are sometimes contaminated from the same cause with carbonate and oxalate of lime.

These analyses are therefore conclusive as to the composition of this earthy phosphate. In order to show that no error has been committed in them, I here append the process adopted. That the deposit in question really consisted of a *phosphate*, was first repeatedly determined by the action of a solution of nitrate of silver; the crystals, when touched with this reagent, assumed a bright golden-yellow colour. After having been separated and washed in distilled water, the phosphate was ignited to free it from animal matter, urea, &c., and weighed. It was then dissolved in hydrochloric acid; ammonia was added until a permanent precipitate formed; this was re-dissolved by the addition of acetic acid. First the *lime* was precipitated from the solution by oxalate of ammonia, and afterwards the *magnesia* as follows:—Chloride of ammonium was added, then ammonia in slight excess, and, lastly, phosphate of soda. The oxalate of lime formed was converted into carbonate of lime in the ordinary manner, and the phosphate of ammonia and magnesia into the pyro-phosphate of magnesia; these were then weighed separately, and the amounts of the bibasic phosphate of lime were determined by the usual calculations. The results obtained corresponded very closely with the original weights of the ignited phosphates subjected to analysis. The analyses, therefore, show that the crystallized phosphate of lime is a tribasic phosphate, containing two atoms of lime, and, most probably, one of water.

Form of the Crystals.—The size, form, and arrangement of the crystals of phosphate of lime, as they occur in human urine, vary greatly, but the peculiarities are in all cases sufficiently characteristic to allow of the ready identification of this phosphate by means of the microscope. The crystals are either single or aggregated, most frequently the latter, forming glomeruli or rosettes, more or less perfect. Sometimes they are small and needle-like, and then they frequently form, by their crossing and union at right angles, glomeruli or spherules. Sometimes the crystals are thin and flat, having oblique or pointed terminations. Very frequently, however, they are thick, and more or less wedge-shaped, and united by their narrow extremities so as to form more or less complete portions of a circle; the free larger ends of the crystals are usually somewhat oblique, and the more perfect crystals present a six-sided facette. I have never yet met with these crystals having both ends perfect, owing, I believe, to the tendency which they have to crystallize from a centre in rosettes. When these crystals are kept in the dry state for a long time, they not unfrequently break down and crumble into powder.

The late Dr. Golding Bird, in his work on "Urinary Deposits," has given a representation of some crystals which he has denominated "*penniform*," describing them as consisting of a variety of the magnesian phosphate; the crystals figured do, however, undoubtedly represent a modification of those of *phosphate of lime*. Although I have elsewhere pointed out this error, most recent writers on the urine still persist in describing these crystals as a variety of the phosphate of ammonia and magnesia.

On the frequency of their occurrence.—I find, as already stated, that phosphate of lime, in the form of crystals, is of much more frequent occurrence in human urine than the triple phosphate, excluding those cases of the presence of the latter phosphate which are due to the decomposition of the urea of the urine subsequent to its emission. I have met with deposits of crystallized phosphate of lime in some hundreds of urines, and in many different cases; it is therefore not a little remarkable, from the frequency of its occurrence, and the peculiarities presented by the crystals, that it should have been so long overlooked. The microscope, therefore, furnishes us, in most cases, with the ready means of detecting the presence of deposits of phosphate of lime, as of so many other urinary deposits.

Characters of Urine depositing Crystallized Phosphate of Lime.—The urine from which phosphate of lime is deposited is usually pale, but occasionally it is high-coloured; the quantity passed is large, and the calls to void it frequent, more or less uneasiness and smarting being occasioned by its passage, at the neck of the bladder, and along the course of the urethra: its specific gravity varies greatly. Taking the whole quantity passed in twenty-four hours, it is usually below the average, nevertheless the animal matter and urea are absolutely in excess. It is generally feebly acid, often decidedly so when first voided, the greater part of the phosphate of lime becoming deposited while the urine still retains some degree of acidity; it, however, speedily becomes alkaline, owing probably to the excess of mucus contained in it. Sometimes the crystals of phosphate of lime are thrown down from the urine before its escape from the bladder; ordinarily, however, the urine is

bright and clear when passed, and the crystals are not formed until some time after it has been voided. In collecting this phosphate for analysis, the object being to procure it in as pure a state as possible, and as free from phosphate of ammonia and magnesia, oxalate and carbonate of lime, it should be separated from the urine very soon after it has become deposited, and before decomposition has had time to set in.

On the Pathological Importance of Deposits of Phosphate of Lime in Human Urine.—Of the pathological importance of excess of phosphate of lime in the urine not a doubt can be entertained, but certain reasons and facts may be advanced to show that deposits of that phosphate have a deeper pathological significance than those of the phosphate of ammonia and magnesia. The proof of this is the more necessary, since writers on the urine are in the habit of describing, as well as of treating, deposits of the earthy phosphates collectively, and without distinguishing between them; this course was natural enough so long as they were unacquainted with the fact that deposits of phosphate of lime, in the state of crystals, are of frequent occurrence, or so long as they mistook them for a variety of the ammonio-magnesian phosphate. One reason why we should be disposed to attach greater importance to the excess of the calcareous than the magnesian phosphate, is that most of the phosphoric acid of this last phosphate, and all the magnesia, are derived from *without*, being contained in the various articles consumed as food; while for the phosphate of lime, we have in the system—in the teeth and bones, and also in the nitrogenous tissues,—sources containing some pounds weight of this phosphate.

That the osseous system is subject to disintegration is certain, and that the extent and rapidity of this differ remarkably in different cases is equally so. This is shown by the simple fact alone, of the early and rapid decay of the teeth in many persons. For this general reason therefore only, we should, *à priori*, be disposed to attach greater importance to the occurrence of deposits of phosphate of lime than those of phosphate of magnesia.

Other facts tending to confirm this view are,—first, that while deposits of phosphate of lime are frequently met with, those of phosphate of magnesia (not the ammonio-magnesian phosphate) are exceedingly rare; and second, that the calcareous is of more difficult solubility than the magnesian phosphate. This last circumstance explains probably why phosphate of lime falls as a deposit from acid urine, while phosphate of magnesia remains in solution.

The particular or special reasons for regarding deposits of phosphate of lime as of more moment than those of the triple phosphate, are derived from direct pathological observation. I have observed that when this deposit occurs, it is very apt to be persistent; and when it has disappeared, to return whenever the health is reduced from any cause. I have also noticed, that when it is persistent, it is usually associated with marked impairment of the health, and this often where organic disease does not exist. The prominent symptoms in one case of calcareous phosphatic deposit which I have had under observation for some years, were,—great disorder of the digestive organs, frequent and distressing headaches, occasional vomiting, debility, emaciation, great irritability of the nervous system, sexual powers weak, pulse slow and feeble, skin cold, urine in excess, of rather low specific gravity, acid when passed, but soon becoming alkaline, micturition frequent, with irritation at neck of bladder and in the course of the urethra; teeth much decayed. It should be stated that there is in this case a very slight tendency to paralysis of the right leg, as shown by an occasional sensation of coldness in the limb, and slight deficiency of power in it at times only. This symptom is, however, by no means a constant or necessary one in such cases.

If these views of the pathology of phosphate of lime be correct, we should expect to find an excess of that phosphate in the urine in great and rapid waste of tissue, during the rapid decay of the teeth, and in cases of mollities ossium. That there is an excess of the calcareous phosphate in the urine in these cases, is shown alike by observation and analysis.

It is obvious from this imperfect sketch, that much remains to be effected in regard to the pathology of phosphate of lime; but now that the frequency of its occurrence in human urine as a crystallized deposit is made known, its pathology, apart from that of the triple phosphate, will no doubt be specially considered.

It will be apparent from the following quotation, that the late Dr. Golding Bird regarded deposits of phosphate of lime as of more consequence than those of the triple phosphate:—

"The pathological state of the system accompanying the appearance of deposits of phosphate of lime is analogous to that occurring with the triple phosphate; indeed, as has been already observed, they often, and in alkaline urine always, occur simultaneously. So far as my own experience has extended, when the deposit has consisted chiefly of the calcareous salt, the patients have appeared to present more marked evidence of exhaustion, and of the previous existence of some drain on the nervous system, than when the triple salt alone existed, unless its source is strictly local."

It should be remembered that these remarks of Dr. Bird refer to deposits of phosphate of lime in the *granular state*, and not to the crystalline deposits, with the occurrence of which he was unacquainted. I have already stated that, according to my experience, the granular calcareous phosphatic deposits are much more rare than the crystalline.

It follows from these observations and investigations:—

1st. That deposits of *crystallized* phosphate of lime are of frequent occurrence in human urine, much more so, indeed, than those of the amorphous or granular form of that phosphate.

2nd. That the crystals present well-marked and highly characteristic forms, whereby the identification of this phosphate, by means of the microscope, is rendered easy and certain.

3rd. That there is good reason to believe that deposits of phosphate of lime are of greater pathological importance than those of the phosphate of ammonia and magnesia.

Medical Societies.

ROYAL MEDICAL & CHIRURGICAL SOCIETY.

TUESDAY, JUNE 26TH, 1860.

MR. F. C. SKEY, F.R.S., PRESIDENT.

ON A CASE OF BRONZED SKIN CONNECTED WITH DISEASE OF THE SUPRA-RENAL CAPSULES.

BY C. J. B. ALDIS, M.D., F.R.C.P.

ROBERT B——, aged twelve, was admitted under the author's care as a patient at the Surrey Dispensary on March 29th, 1859, with the following symptoms. The body generally was of a dark-olive colour, and the pulse feeble, with occasional vomiting, pain in the back, languor, and disposition to lie down. The eyes were sunken, and the conjunctivæ pearly white.

The illness commenced about four months previously, at which period he was in very good condition. The discoloration of the skin had been noticed during two months; soon afterwards the urine began to dribble away, and loss of flesh supervened, with extreme prostration. The author, believing the complaint to be that mentioned above, placed the patient under Dr. Addison's care, at Guy's Hospital, on Aug. 17th, who confirmed the diagnosis made before he entered that institution.

The complaint having proved fatal on Aug. 20th, 1859, Dr. Wilks, who took much interest in the case, kindly sent an account of the post-mortem examination to the author. A model was made of the diseased organs. The body, spare and universally tinged of a brown hue, presented no disease internally, excepting in the supra-renal capsules, which were converted into a tough yellow matter, their original tissue having entirely disappeared.

REPORT OF CASES ILLUSTRATING THE USE OF FORCEPS IN EXTRACTION OF CATARACT.

BY JOHN F. FRANCE, ESQ., F.R.C.S.,
OPHTHALMIC SURGEON TO GUY'S HOSPITAL.

The object of the present report is to illustrate the advantage obtained by employing forceps, in addition to the ordinary means of fixing the globe, in extraction. The author, after glancing at the need felt for some such auxiliary from the earliest introduction of this operation to the present time, as proved in a former communication on the subject in "Guy's Hospital Reports," pointed out the casualties to which defective command of the globe is apt to give rise—viz., premature escape of the aqueous humour, faulty section of the cornea, injury to the iris, loss of vitreous humour; and, in short, from various sources, jeopardy to the ultimate issue. He then briefly explained the mode of using forceps for the purpose in view; and, having noticed the complete command of the eye obtained by this means, proceeded to a condensed recital of twenty-one cases not hitherto published, exhibiting the practical working of his suggestion. These examples comprised every one, without exception, in which the author had per-

formed extraction, from the date of his previous publication to that of the twenty-first case; and, in collating them with the former series, he showed the infrequency of the accidents above adverted to, and the high average of success under the plan recommended. The author claimed weight for the extended evidence thus yielded by a catena of forty one examples, affording as they do the strongest testimony in favour of the method of operating in question; and, in conclusion, quoted the report of Dr. Steventon, of Cheadle, who speaks highly of the advantage he had himself derived from adopting this method, and acknowledges the increased success he had met with since doing so.

TABULAR STATEMENT OF SEVENTY-TWO CASES OF HÆMATEMESIS, WITH REMARKS.

BY C. HANDFIELD JONES, M.B., F.R.S.,
PHYSICIAN TO ST. MARY'S HOSPITAL.

(*Communicated by* H. BENCE JONES, M.D., F.R.S.)

The author stated that the seventy-two cases of hæmatemesis contained in the table are all that have been met with amongst 2500 selected cases of all kinds, and about 10,000 (speaking roughly) of all cases occurring in ordinary medical practice. The chief practical points which a perusal of these cases suggests are—1. The number of cases met with in which the existence of gastric ulceration is a matter of great uncertainty, and in which one cannot avoid asking oneself whether the hæmorrhage may not be simply analogous to common epistaxis. That this is possible, even when the hæmorrhage is copious, is shown by the record of a case given by Dr. Brittan. 2. The number of cases in which all complaint of dyspepsia was either absent or so slight that it would have been impossible to distinguish it from that attendant on gastric catarrh, gastralgia, or gastric debility. 3. The great benefit of a tonic plan of treatment steadily carried out.

The paper was accompanied by a table in which are recorded, for each of the seventy-two cases, the age and sex of the individual, the period at which hæmatemesis occurred, any important events prior to the attack, the symptoms observed at the time, and the treatment of the case, with its result.

CONTRIBUTION TO THE STUDY OF SPIROMETRY.

BY T. GRAHAM BALFOUR, M.D., F.R.S.

The author's investigations confirm the observations on the vital capacity of the lungs in Mr. Hutchinson's paper, read to the Society in 1846. He gives the results of the measurements, by the spirometer, of the recruits, 1126 in number, enlisted into the Grenadier Guards between October, 1848, and March, 1853, with the mortality and invaliding amongst them from the dates of their enlistment till the end of March, 1854.

After certain corrections pointed out by the author as necessary to render a comparison accurate, the results of the measurements in the Guards are almost identical with those made by Mr. Hutchinson, as will be seen by the following summary showing the average "vital capacity" of men of different heights:—

		Height of Grenadier Guards.				
		5ft. 8in.	5ft. 9in.	5ft. 10in.	5ft. 11in.	6ft.
Vital capacity	Balfour	231·5	239·8	245·6	251·5	255·9
	Hutchinson	231·5	240·5	245·5	252·0	258·8

The author observes that the identity of these results is very remarkable, and may fairly be accepted as evidence of their accuracy.

He next examines the question whether a low vital capacity may be taken as an indication either of a tendency to pulmonary disease, or of a feeble constitution, rendering the individuals liable to a high rate of mortality. To test this, the men have been divided into three classes, according to the extent of their vital capacity, and the mortality in each class has been traced. The results show a most remarkable coincidence in the mortality of the three classes, the difference amounting only to 0·6 per 1000, in favour of men having a vital capacity above the average. But a different result was obtained in regard to the men discharged as invalids, the number who became non-effective being much greater amongst those having a vital capacity below the average than in the other two classes.

The author next discusses the value of the spirometer in the selection of recruits, as indicating the men having a tendency to pulmonary disease, and points out the necessity, in such an investigation, of including the total loss arising from consumption, both by death and invaliding. The tables and calculations submitted showed that this loss is much greater amongst the men having a vital capacity below the average than among those of a capacity equal to or above the average. From the results obtained the author concludes that a vital capacity below the average may be considered rather as indicating a generally feeble organization, less capable of resisting the deteriorating influences to which a soldier is exposed, than as evidence that a definitive relation exists between the vital capacity and a tendency to pulmonary consumption. Although this conclusion would seem to justify the opinion that the spirometer might be advantageously employed in testing the fitness of recruits, the author points out practical objections to it which appear insurmountable; but he admits that it might be useful as an indication to the inspecting officer of the necessity for a careful examination by the stethoscope in cases of a very low vital capacity amongst men coming forward for enlistment. Finally, he concurs in the views expressed by Mr. Hutchinson of the practical value of the spirometer to the medical referees of Life Assurance Societies.

HARVEIAN SOCIETY.

J. C. LANGMORE, M.B., VICE-PRESIDENT, IN THE CHAIR.

MR. WEEDEN COOKE read a paper

ON THE COMMUNICABILITY OF SECONDARY SYPHILIS.

He said that it was singular how many questions respecting syphilis remained unsettled, considering the numbers who suffered from the disease, and the length of time it had been known and studied. Even the primary symptoms still gave rise to controversy. Some declared the hard chancre only infectious; others, that the soft chancre does not infect the constitution, but may produce a hard chancre which does infect; whilst others denominated the soft chancre a cancroid ulcer, which was not syphilitic at all; a fourth party, however, considered both these chancres syphilitic, and therefore capable of producing constitutional symptoms. As a consequence of these differences of opinion, there was much diversity of treatment, which was a practical evil. Respecting the communicability of secondary symptoms, there was yet much to be cleared up. It was a recognised fact that secondary syphilis was conveyed through the father to the fœtus in utero, and from the fœtus to the mother. The author had verified this fact in numerous instances, and related the case of a lady who had two syphilitic children without herself being affected, but on the birth of a third she was infected, and exhibited all the signs of a severe constitutional attack. Although this mode of communication had been long recognized, it had until recently been denied that secondary symptoms ever were communicated from one person to another. It was well known, however, that M. Ricord, the staunch supporter of non-communicability, had been obliged to modify his opinion, owing to the production of incontestable evidence that the discharge from secondary ulcers did produce eruptions and ulcers of a similar character; whilst the French authorities, convinced of the possibility of this infection, not long since prosecuted two medical men for inoculating two children suffering from favus with the matter of secondary syphilitic disease. Mr. Henry Lee, also, had recently brought before the profession instances which favour the conclusion that the constitutional disease can be conveyed from one person to another.

Mr. Cooke then related the particulars of a boy who had been recently under his care at the Royal Free Hospital, exhibiting indubitable evidence of this occurrence. A fine boy, seven years of age, was covered with an eruption, which could not be mistaken for anything but psoriasis syphilitica. He had also enlargement of the occipital glands, the throat was much injected, and he had recently, from being a very healthy boy, become cachectic. He was ordered two grains of grey powder twice a day, and got quite well in less than three weeks. His mother, who brought him, was herself affected with the same eruption. She had also ulcers on the inside of her lips and cheeks, and had suffered much from rheumatism. Her husband had given her primary syphilis one year before. After being "cured" of this, secondary symptoms appeared, and she was treated and got well. She remained well until about six weeks ago, and had since that been affected as stated. The boy slept with her, and she was of course in the habit of kissing him. A month after the reappearance of the disease in the mother, the son became affected. This case Mr. Cooke considered conclusive of the possibility of communicating

secondary syphilis. It was no doubt a very rare occurrence, because the discharge from a secondary ulcer would very rarely be applied to a raw surface capable of absorbing it; but, when so applied, it evidently had the power of infecting a previously healthy person, and it was most desirable that this fact should be known and recognised.

Reviews and Notices of Books.

THE JOURNALS, ETC., FOR THE QUARTER.

The British and Foreign Medico-Chirurgical Review (No. LI., July) opens with an analysis of "The Examinations of our Medical Corporations." The writer draws particular attention to the value of examination papers, and to the importance of their free publication:—

"It is through the answers given to them by the candidates that the examiners and licensing bodies exercise a hold over the general mass of students; but it is in the questions themselves, their scope and character, that the profession at large has a hold on the examiners. Here, as in other subjects, an uniform and equal standard can best be brought about by the influence of public opinion."

Dr. Waters having received commendation for his work on "The Anatomy of the Human Lung," the "Life, Diseases, and Death of Miners" are treated of somewhat in detail, praiseworthy attempts being made to point out the neglected class of subterranean workers to the sympathy and active benevolence of those who may be enabled in any degree to ameliorate their physical condition. After one or two articles upon Anatomy and Surgery, Lunacy, and the Health of the Navy, comes a review of Voisin's recent work upon "Retro-uterine Hæmatocele, and Non-encysted Extravasations of Blood in the Peritoneal Cavity of the Pelvis." These being subjects comparatively new to British practitioners, we recommend the perusal of this paper in particular to all interested in the diseases of women. Dr. Inman, being allowed to introduce his "Foundation for a New Theory and Practice of Medicine," is informed at the close of the interview that—

"Twenty years hence, when he has read and seen more, he will give us another edition of his work, which will better justify the title he has chosen than the present.....If we confine our thoughts to our own limited range of observation, we shall inevitably form narrow and one-sided views; but if we take as wide a range as possible, we shall see truth under various aspects and forms, and our conceptions will become larger and more correct."

The original communications of the present number are by Dr. Wood, "On the Progressive Paralysis of the Insane;" by Dr. Bond, "On the Pathology of Chorea;" and by Retzius, "On Ethnology."

No. XIX. of the *Journal of Psychological Medicine and Mental Pathology* has its usual interesting "Psychological Quarterly Report," in which "Agapemones" and "Suicide" are particularly noticed. The chief practical articles are upon the "Reform of Lunatic Asylums," "the Asylums of Italy, France, and Germany," and the "State of Lunacy in Scotland." The first of these is written by M. Parigot, one of the Inspectors of Lunatic Asylums of the arrondissement of Brussels. It is a comparison of the usual *asylum* system of treating the insane with the so-called *free-air* system adopted at Gheel; and the judgment arrived at is that the Belgian system is by far the better. It is proper to say that the Editor of the Review intimates, in a note, that he entirely dissents from M. Parigot's conclusions.

No. XXXIV. of the *Journal of Mental Science* contains the account of an interesting case of "Homicidal Mania without Disorder of the Intellect," for the explanation of which rather paradoxical title we must refer to Dr. Lockhart Robertson's paper, which will repay perusal. The short review of Dr. Hood's essay on "Criminal Lunatics," is worthy of notice.

The *Journal de la Physiologie* of Dr. Brown-Séquard (Nos. X. and XI.) is before us. M. Boudin contributes an interesting article upon the "Non-cosmopolitism of the Human Races," and M. Broca concludes his memoir upon the "Phenomena of Hybridity witnessed in Man." The first instalment of an essay upon "The Synthesis of Cataract," by Dr. B. W. Richardson, is contained in the last part, and for the conclusion of which we look forward in expectation of some important deductions.

The *Edinburgh Veterinary Review and Annals of Comparative Pathology* (No. VII., July) is as various and interesting in matter as usual. Judging from Mr. John Gamgee's "Synopsis of Course of Lectures on Veterinary Medicine and Surgery, delivered in the New Veterinary College," the instruction given at this institution is of a highly scientific and advanced kind.

We wish we could say something in praise of the first part of the new *London Medical Review*, which is to appear monthly. We really cannot, however, for we think it a very heavy and prosy specimen, and unfortunate in the choice of its subjects for an introductory number. We have the old story of the spine and joints, and the so-so one of the ophthalmoscope. What, too, does the author of the first paper mean by a *philosophical* arrangement of tumours? We understand what a *scientific* arrangement of such things might pretend to be, or a philosophical arrangement of the data of psychology, ontology, sociology, and of ethics, but the *philosophy of new growths* is beyond our comprehension. It is usual to introduce a new journal by saying that "it supplies a want." What want does this supply?

We may here announce the appearance of the ninth part of *Ure's Dictionary of Arts, Manufactures, and Mines.* It includes subjects from *Iron* to *Lynx.* Amongst them, *Lead* and *Leather* receive very careful attention. We are glad to find this work appear at its regular intervals. In this respect, it sets an example to some of its dilatory contemporaries.

Das Corrosive Geschwür im Magen und Darmkanal (Ulcus Ventriculi perforans s. chronicum rotundum), und dessen Behandlung. Von Dr. LUDWIG MÜLLER, Practischen Arzt, &c., in Minden. Erlangen, 1860. S. 274 und 2 Tabellen.

Corrosive Ulcer of the Stomach and of the Intestinal Canal, and its Treatment. By Dr. L. MÜLLER, Practising in Minden. Erlangen, 1860.

THIS is a very full and good exposition of the important subject of gastric ulcer. It is true there is nothing very *novel* in Dr. Müller's essay, and it can scarcely be said to add anything material to our knowledge of those leading characters of the disease which are so concisely but well laid down in the recent work of our countryman, Dr. Brinton, upon "Ulcer of the Stomach." The book, indeed, is rather characterized by its copious illustration of the varieties of the morbid state in question, and the numerous complications with which it is associated. The literature of this country and the continent has been well searched to enable the author to elaborate his views, and the result is a very satisfactory *résumé* of one of the most interesting and insidious diseases which afflict humanity.

HUMANE IMPROVEMENTS IN SLAUGHTERING.—*L'Union Médicale* lately published a valuable report read at the general meeting of the Paris Society for the Prevention of Cruelty to Animals. In this document are described several cruel practices which are of daily occurrence, both during the conveyance of the animals to Paris and the actual treatment of them at the slaughter-houses. It is to be hoped that this publicity will lead to the removal of the evils alluded to. Amongst the suggestions which the report has drawn forth, is one which deserves attention. M. Auber, of Macon, thinks that air injected or blown into an opened vein would bring on instantaneous and painless death; and grounds his belief upon the effect produced upon dogs and other animals by this mode of destruction. He adds that it was customary with the French army at Rome to kill in this humane manner horses unfit for further service.

THE LANCET.

LONDON: SATURDAY, AUGUST 4, 1860.

FATHER THAMES, aided by the natural elements, has this year so effectually accomplished the task of harmlessly converting the sewage we discharge into his bed, that there has been no need to call upon the regular practitioner, or the crowd of disinfectant-mongers to make up for his shortcomings. We have now arrived at the beginning of August; and, wonderful to relate, the river has remained as fresh as in the depth of winter, or in the days of yore, before the epoch of Commissioners of Sewers. For a season, at least, the depopulation of London by river malaria is stayed.

The key to the whole mystery of the purifying capacity of the Thames at London is simply this: it is a battle between the down-flowing freshet and the up-flowing ocean-wave. If the tidal wave has the preponderating power, and beats back the fresh-water to a point above the town, then the sewage is likewise ponded up, it accumulates, mixes with the sea-water; under the influence of summer heat, reaction and decomposition ensue, and the product is the delectable odour with which for three preceding summers Londoners were regaled. If, on the other hand, the spring rainfalls are heavy, causing an abundant and continuous freshet, then the salt-wave in its turn is resisted in its ascent; the sewage is received into fresh water, which rapidly disinfects it; the strong down-current sweeps all below London, and we are free from all annoyance. In either process, excessive temperature acts an important but still a subsidiary part. The temperature of the water must reach 60° in any case to give rise to active decomposition. But if the freshet is so strong as to carry the salt-water down as low as Blackwall, even a higher temperature will not produce any very sensible effects. For some weeks past the temperature of the water has exceeded 60°. The advance of the salt-wave is indicated by analysis of the water taken at high tide at a fixed point. Thus in June, 1858, the water so taken at London-bridge contained an average of 147 grains per gallon of solid constituents; in June, 1859, it contained 88·3 grains; and in June of the present year only 30·7 grains. This latter proportion indicates the presence in London even at high tide of water almost fresh. Under these circumstances the sewage is swept past us in fresh water, and undergoes in its transit an inoffensive conversion into oxides and living organisms, which take the place of the putrid decomposition attendant upon the reaction of sewage and sea-water. Such is the lesson taught by the continuous observation of the waters of the Thames, conducted on the plan proposed by Dr. BARNES in 1857, and carried out by him and Dr. ODLING during that year, and by Dr. ODLING, Dr. LETHEBY, and Professor MILLER in 1858, 1859, and 1860. All subsequent observation confirms the conclusions put forward in 1857.

Now comes the question, What are we to do when the Thames is itself unequal to the task of disposing of our excreta without returning it in the form of putrid gases? The plans tried have been but partially successful. We postpone all reference to what some look forward to as the radical cure—the interception of the sewage from the metropolitan part of the river. We will refer more especially to the plans for disinfecting the sewage previous to discharging it into the stream. Last summer was a trying season. Stations were established near the outlets of the main sewers for treating the sewage first with lime, and afterwards with chloride of lime. We believe the opinions of competent observers differ as to the efficacy of this treatment. But the following facts remain:—The temperature of the air and the water was mostly higher, and the rise of the salt-wave also higher in 1859 than in 1858; and yet the offensiveness of the Thames was not so marked or persistent. To a certain extent it may, therefore, be inferred that putrefaction was arrested. But even those who were best satisfied with the lime and chloride of lime were anxious to discover a more efficient remedy. Our readers are familiar with the discussions on the merits of the various preparations of chloride of iron; they know that it was intended by the Metropolitan Board of Works, under the advice of Professors HOFMANN, MILLER, and FRANKLAND, to employ this year DALE'S, or some other, perchloride of iron; and they are aware how, owing to the criticisms of Dr. ODLING and Dr. LETHEBY, and more especially the remarkable discovery by the latter chemist that DALE'S fluid contained an enormous quantity of arsenic—viz., nearly three hundred grains of chloride of arsenic per gallon,—all idea of employing a material that may be dangerous, as well as inefficient, has been practically abandoned. As we have said at the beginning, the Thames, by behaving so admirably this year, has given abundant time for the investigation of new expedients. The most promising appears to be M'DOUGALL'S fluid, which consists of carbolic acid, or the creasote of coal-tar. The evidence in favour of this agent as a disinfectant, or rather as a preservative against decomposition, is very striking. At Croydon, the scene of many famous hygienic experiments, where the perchloride of iron and other means had failed, the carbolic acid is now in use, we are informed, with full success. All annoyance there from decomposing sewage has ceased. At Carlisle, 600,000 gallons of sewage—the entire excretion of the town, during the fourteen hours per day of working—is treated with this substance. The mixture is there used for irrigating about eighty acres of meadow land with a very interesting result. We are informed that the product of the sewage-irrigated meadows near Edinburgh must be consumed as grass, and cannot be gathered and preserved as hay, owing, no doubt, to imperfect assimilation of the putrescible sewage. At Carlisle, however, excellent grass and hay are produced, which sell at a good price; whilst complete freedom from sewage-nuisance is enjoyed.

Another piece of evidence is interesting. In Paddington, under the sanction of Dr. SANDERSON, the medical officer of health, the carbolic acid is used for watering the roads. The detritus of manure, which in warm weather imparts so disagreeable an odour to the atmosphere, is said to be entirely obviated, so that the inhabitants highly appreciate the system.

Again, during the month of July this agent has been subjected to careful experiment upon a sewer in the City, under the superintendence of Dr. LETHEBY. The carbolic acid was poured into the head of a system of sewers taking the excreta of about 21,000 inhabitants. The proportion used was one gallon of carbolic acid to 32,000 gallons of sewage; and the result was so perfect that sewage taken near the river outlet was found to be entirely free from putrefaction. Looking at this result, we cannot but hope that the sewer nuisance is at length brought under control; and that we possess in this

material a cheap, easy, and effectual remedy against the continuous evolution of poisonous and offensive gases from gulleys and house-drains. This primary evil, if not more dangerous to health, is certainly more widely diffused, than the secondary emanations from the Thames. It ought to be encountered energetically on the plan we have several times enforced—namely, by the simultaneous establishment of disinfecting stations in many different points of the periphery of our great sewage system. Were this thoroughly carried out, we should have none but deodorous sewage flowing past our houses and under our feet, and no decomposing matter discharged into the river. Thus would two most desirable ends be attained by the same operation. It deserves to be further remembered that the sewage thus preserved from change would be ready in the most convenient form for utilization as manure, in the event of any efficient plan being proposed for applying it to the irrigation of our impoverished fields.

THE evidence at the late trial at Lewes for manslaughter by the negligent administration of a poisonous dose of hydrocyanic acid to an old lady by a medical practitioner, her son, raised questions relating to the pharmaceutical relations of this and other poisons, which are of very great importance, and particularly worthy of consideration at the moment when the committees of the Medical Council are preparing a common Pharmacopœia for the United Kingdom.

It is no small evil that the preparations of this deadly poison, known by the same name or distinguished only by additional appellations, often forgotten and unused, are of the most dangerously variable strength. It is but lately that a painful sensation was produced by the long and serious illness and narrow escape from death of a lady who fell a victim to an error due to a confusion of these preparations in the dispensing a prescription of an eminent physician lately deceased. The acidum hydrocyanicum of the London Pharmacopœia contains two parts of real hydrocyanic acid, and ninety-eight parts of water. The acidum hydrocyanicum of the Dublin Pharmacopœia contains rather more than two parts of pure hydrocyanic acid in a hundred of water. The acidum hydrocyanicum of the Edinburgh Pharmacopœia contains about three and three-tenths to three and one-fifth per cent. of the real acid. Hence Dublin or Edinburgh patients bringing their prescriptions here might very readily be poisoned by the employment of the substance designated in the prescription, but which is here prepared of three times the Dublin strength. To avoid such a possibility, most prescribers append the initial letters of the Pharmacopœia from which they prescribe; but the precaution is not effectual, nor is it always observed.

Again, many physicians, to avoid, probably, the complications induced by the varying standard of pharmacopœial strength, are in the habit of ordering Scheele's acid. This is generally expected to contain four per cent. of real acid, or to be nearly double the strength of that of the Dublin Pharmacopœia. But although there can in such prescriptions be no doubt as to the preparation intended, there may be great variation in the strength of the acid supplied. Scheele's acid varies from four to six per cent. in strength. We are told, moreover, by experienced chemists, that hydrocyanic acid is a very unstable body, and liable to spontaneous decomposition. The strong and pure acid gradually undergoes a change into inert compounds, unless preserved in vacuo. The most diluted acid, when containing either a little sulphuric or hydrochloric acid, resists this change. The attention of the compilers of the new Pharmacopœia will then, no doubt, be turned to the ordination of a strict and uniform preparation of this potent medicine.

Another practical blot, of general and grave import, was hit at this trial. Two of the witnesses were puzzled to state the difference between "minims" and "drops." One witness considered that a "drop" (gutta) and a "minim" (minima) were synonymous terms, and another that a minim was twice the size of a drop; but in fact, the size of a drop varies according to the size and shape of the neck of the vessel dropped from, the specific gravity of the liquid, and other causes. In a table in the last edition of Mr. PARRISH's well-known work on "Practical Pharmacy," fifty-two drops of dilute hydrocyanic acid dropped from a minim measure are said to be equivalent to one fluid drachm; while as many as two hundred and seventy-six drops of chloroform are required for the same measure. And to show the difference due to variation in the size of the vessel, when chloroform is dropped from a pint or half-pint tincture bottle, only one hundred and eighty drops are required for the fluid drachm. The system of dropping will therefore, we hope, be altogether interdicted in the coming Pharmacopœia. It is a question, also, whether provision should not be made by the College of Physicians for the inspection of minim measures. The minim drachms are said to show differences varying from two to ten minims, and two measures rarely correspond.

In the late case, death was in all probability due, not to the excessive strength of the acid, since it did not appear to be beyond the usual standard, but to the excessive quantity accidentally administered. The Dublin College have long since not disdained to enter upon the subject of the precautions which may be taken to prevent the possibility of these fatal errors and inadvertences by specializing the shape and construction of the bottles destined to contain, respectively, fluid poisons, potent medicines, liniments, and poisonous powders. The Dublin Pharmacopœia roughly recognizes such a system, and it is now being adopted throughout the Army Medical Department. The bottles employed in the military medical service are the safeguard bottles described some time since in THE LANCET, and introduced by SAVORY and MOORE. They preclude the possibility of accident by any degree of conceivable carelessness or stupidity. The necks of the bottles intended for potent preparations are so contracted that their contents can only drop from the bottle; and to the careless dispenser accidentally seizing a wrong bottle, the slowly distilling stream would give due notice of his error—a notice such as would have saved the late Mr. DAWSON, whose life, full of promise, was cut off by his accidentally pouring out for himself a quantity of tinctura aconiti in lieu of tinctura aurantii; would have prevented the fatal accidents at Canterbury and Chelsea, due to similar causes; and this last tragedy at Lewes. The deeply-fluted, square-shaped bottles in which lotions and liniments are dispensed, do not permit external applications to be confounded with draughts, even in the dark; and thus deaths from such causes as that which proved fatal to the Hon. Mrs. ANSON are rendered impossible. For the powders, ingenious bottles have been provided, which are filled from the bottom, and the powder shaken out from a hole at the top. A dispenser can regulate to a fraction of a grain the quantity of powder leaving the bottle, the slightest movement of the hand sufficing for the purpose. Were such bottles everywhere provided, pulv. opii Turc. could not be supplied in the room of pulv. rhei Turc.,

as in a case which we chronicled; nor could laudanum be given instead of an aperient mixture. It seems highly important that the necessity of adopting these safeguards should be enforced upon chemists and dispensers. Looking to the number of deaths due to accidental poisoning arising from the error of patient or dispenser, it is difficult to account for the slowness to adopt a remedy which is efficacious and without cost; for bottles of these shapes and colours are not more expensive than any others, and afford a guarantee for life, while they impose no additional trouble or responsibility. The College of Physicians is charged with the inspection of all matters pharmacopœial, and this may well enter into the programme of their inquiry.

THE leading Counsel who have been consulted by the College of Physicians and the Apothecaries' Company, as to the power of the former body to create a new order of Licentiates, who shall not be restricted from supplying medicines to their own patients, have managed to utter such oracular responses that the clients prefer an appeal to the legal tribunals. It seems that, even with the best intentions, it is in many instances impossible to place a case before Counsel in such a complete manner as to warrant a conclusive judgment. Especially is this so in the present instance. There can be no doubt that the College has in former times both possessed and exercised the power of licensing to practise pharmacy; and a clause reserving all its existing powers was inserted in the Apothecaries Act of 1815. It is even admitted, we hear, by Counsel, whose opinion is taken to be adverse to the College, that the College may now, if it pleases, license to practise pharmacy, but that if it does so, it must abrogate the bye-law which forbids Fellows from the practice. Under these circumstances, viewing the *extra-curial* contradictions of Counsel, there is no other solution of the difficulty than to fly to that conflict of argument in which the contending parties are sure to elicit from each other the utmost ingenuity in exhausting the facts and arguments for and against. If the decision of the legal tribunals should prove favourable to the College, the recent resolution of that body will probably be acted upon forthwith. If, on the other hand, the decision should be adverse, then new powers will be sought from Parliament.

FOR several years past the injustice to which the assistant medical officers of our hospitals have been subjected has been the theme of many of the leading articles in this journal. What is the position of these most useful members of our profession? Selected from the most energetic and well informed of the rising men of the profession, they are called upon to devote their time and skill to a vast number of patients who require their assistance. But though the hardest worked, they receive no emolument, and, under the present system, may be worn out in the service before they take that position to which their exemplary labours entitle them. It is impossible to conceive an arrangement more disastrous to the reputation of an institution, or more detrimental to the welfare of the suffering poor. Of course the advocates of a vicious system will always be prepared with what are called arguments in defence of the abuse; but, tested by truth and justice, these arguments are flimsy and contemptible. They are even subject to a worse objection—they are the offspring of selfishness and exclusiveness. Again and again have we demonstrated this fact; but hitherto the governing powers of our hospitals have been persistently blind to the truth. But the truth must be told. Hospitals were not founded for the pecuniary advantage of the privileged few, but for the greatest good of the greatest number. If a man labours in the cause of charity honestly and faithfully, he is entitled to all the benefits which may accrue to him from his labours. No one capable of forming an opinion on the subject will deny the force of this assertion. Why, then, exclude the assistant medical officers from participation in the honours and emoluments which pertain to their seniors? Anticipating the answer which may be given, that they must work to obtain a position, we affirm that if they are worthy of treating the out-patients of an hospital they are worthy of being remunerated for their labour. We sincerely trust that the agitation at present existing with respect to the management of the metropolitan hospitals will terminate in such a manner that justice may be done to all their medical officers.

THE PHYSICIAN TO THE COUNCIL OF INDIA.

MUCH misapprehension having been expressed, both at home and abroad, as to the duties and responsibilities of the office of Physician to the Council of India, we here state that they are, almost exclusively, the examining and reporting on sick and wounded officers; the physical examination of civil and military *employés* proceeding to the Indian Presidencies; the examination and reporting on indents for medical and surgical stores for the use of the forces serving in India; and the reporting on all such questions as may be referred by authority to the officer in question. But the last mentioned duties depend, as to their nature and extent, altogether on the good will and pleasure of the Secretary of State for India for the time being. Under one Secretary of State the calls on his physician may be large and continual, while under another they may comprise nothing beyond the ordinary routine duties.

We mention these circumstances in reference to certain expectations entertained in India as to the influence of Sir Ranald Martin to promote the good of the service in which he passed so much of his public life. What he would do his brother officers may learn from what he has done; and they may rest assured that, under his advice, no inequality of position or injustice of any kind will ever reach his brethren in India.

The views of Sir Ranald Martin for the arrangement and government of the Medical Department of the Indian Army, are well known for their useful and comprehensive character. They were stated by him with freedom before the Committee of the House of Commons in 1853. But all useful and comprehensive measures imply "a large expenditure of the public money." Of course they do; but when the question turns out to be medical, surgical, or sanitary, it requires very little knowledge of the world, or the ways of our public officers, to anticipate how such matters will terminate, and how much valuable time may be lost before anything is done.

We are aware that it was proposed to Lord Stanley to place Sir R. Martin in the Council of India. Whether, for such an office, he could be induced to give up his professional career, we know not; but this we know, that for the general interests, and for the interests of the public services in India, a seat in the Council would be Sir R. Martin's proper place.

DEATH OF A LUNATIC UNDER CHLOROFORM.

A DEATH from chloroform has occurred during the week at the West Derby Workhouse, under circumstances which have given rise to much excited feeling and strong comment. At an inquest held on Monday by P. F. Curry, Esq., coroner, it

appeared that the deceased was a female lunatic pauper, subject to fits of violent mania. Dr. J. B. Nevins, the medical officer of the Workhouse Infirmary, deposed that he had given directions that if she became violently excited, his pupil, Mr. Lupton, or Mr. Gough, the governor, should administer chloroform, and then send for him. Chloroform had on several occasions been administered to her. After the first dose she was much better, and he considered the case a proper one for the use of the anæsthetic. Dr. Nevins also said that he was expecting her death every day, independent of the chloroform, but that, no doubt, her death was "hastened an hour or two by the chloroform." It was administered by Mr. Gough, the governor of the workhouse, who had assisted Dr. Nevins at every operation for the last seven years, and who was considered by the latter to be quite competent for the administration in this case. However this may be, there can hardly be any diversity of opinion as to the impropriety of permitting the uncontrolled administration of so potent a narcotic by an unprofessional person. During the inhalation accurate note must be taken of the progressive changes in the respiration, the pulse, the temperature, muscular rigidity, and other vital phenomena. It were idle to rely upon an unskilful person in such matters, and we do not think that long habit is by any means synonymous with skilled experience in such a case. In this instance the circumstances were rendered yet more invidious by the fact that the vapour was applied to a patient described as being in the last stage of exhaustion, and given without due measurement, or the use of any means by which the proportion of the chloroform in the inhaled air could be definitely fixed. The operator "rolled up a piece of lint, placed it in his hand, and poured some chloroform upon it." This adds another death to the terribly long list of those who have died under chloroform, administered on lint without the intervention of Snow's apparatus or any other means for regulating the quantity and proportion inhaled—a careless mode of administration, such as is not tolerated with any other narcotic substance used for therapeutic purposes.

The most remarkable feature in the case, however, is the fact that in this large institution, with all its valetudinarian inmates, its sick wards, and its lunatic ward, there is no resident medical officer. It was owing to this shameful neglect on the part of the guardians that the governor was called upon to act in a medical emergency, and did his best to fulfil his duty according to instructions received. It would appear almost incredible that the sick patients of this workhouse should be left thus destitute of all medical superintendence; but it was given in evidence that at the time of the deceased's illness there was not a medical man within a mile. The counsel on either side concurred in expressing the hope that this investigation might "have the happy effect of infusing more decency into the government of the wretched house at West Derby." And Mr. Snowball, for the defence, said he did not intend to palliate the conduct of the West Derby guardians, for it was impossible to defend it. Really the Poor-law Board, who are so active in badgering medical officers, might exercise a little useful activity in investigating the reasons of the guardians for leaving the sick of the West Derby Workhouse thus destitute of proper medical aid.

THE DESPOTISM OF DRESS IN INDIA.

IT is now [some five-and-thirty years since Dr. James Johnson, in his "Tropical Hygiene," gave this important advice to the Administration in India: he recommended that military full dress or uniform—the European badge of distinction—should be dispensed with at all festivals, public and private, formal, social, or domestic, within the Torrid Zone. He asserted that though the constantly going about in harness, like a cab-horse, might have a very military look, it was a highly uncomfortable practice and most injurious to health. Many a man, he rightly affirmed, was sent to his long home eventually by the two great nuisances of service in the East—namely, over-parade and brigade drills, and faulty dress. There were commanding officers in those days who kept everyone, from the major down to the drummer-boy, in a continual fret and worry by exaggerated requirements in these respects. We may tell a good story, not known to all our readers, perhaps, in illustration of this. A musical society was formed in Calcutta by a number of gentlemen of the different services and a few professionals, and which rejoiced in the designation of the Amphion Club. Amongst the members was the general officer commanding at Fort William. The weather in Calcutta being pretty warm, the members attended the first meeting of the society dressed in the light habiliments which render the heat there just endurable. The delicate sense of military propriety was shocked at this. The major-general, though he *liked* music, *loved* regimentals; and he ordered that all members of the society should come for the future dressed in full uniform. A most military idea, truly; but it was, unfortunately for the welfare of the society, impracticable. Stout gentlemen, sworded, sashed, coated, and booted, found that thus to play *obligatos* upon the violin, to blow clarionets, to wrestle with the double-bass, &c., was worse than "prickly heat"—it was to threaten with apoplexy. The practice, if not the idea, was dreadful, so the Amphion Club was dissolved; and thus, by a despotism of military etiquette in dress, a promised pleasant association was put an end to. Since the time of the Amphionists, however, many changes have taken place; and amongst those for the better has been the greater freedom allowed in escaping from "harness." But there is some fear, it would seem, of a relapse in India; for no sooner was Sir William Mansfield (who has always, according to the *Bombay Gazette*, passed for a bit of a martinet) appointed Commander-in-Chief of the Bombay Army, than he began to reform the regulations regarding dress. The following circular has lately been issued from head-quarters:—

"Adjutant-General's Office, Head Quarters, Poona, 9th June, 1860.

"SIR,—The Commander-in-Chief desires that the officers of all branches of the Bombay army may be discouraged as much as possible from the use of 'plain' clothes. They are to follow her Majesty's Regulations in this matter, and, according to the Orders applicable to the season, are to appear dressed in uniform in all places of public resort.

"2. In short, whenever an officer leaves his own lines after ten A.M. he is to be dressed in uniform.

"3. This Rule is not to interfere with the dress of officers when they may be engaged in sport, or during their morning rides when off duty.

"4. Officers commanding regiments must be well aware what a great additional expense it is to the young subaltern to keep up two wardrobes—viz., one of 'uniform' and another of 'plain' clothes. Many young officers are led into extravagance and debt upon this account, because they cannot resist the example set by their richer comrades; that which is a convenient fashion in England is really productive of nothing but a foolish and unnecessary expense in India.

"5. It will be understood that officers dining out, whether at the presidency or at military stations, are to appear in their regimental or staff uniform—either in 'full' or 'undress,' as occasion may demand.

"6. This Order does not apply to officers in civil employment under the Government.—I have, &c.,

(Signed) "T. STOCK, Major,
"Officiating Adjutant-General.

"To the Brigadier Commanding — Brigade."

We know that there are many in the Presidency who do not think that Sir Wm. Mansfield will get much credit for his Order. It is difficult to change established customs, and especially when the majority think they are good. It has been urged that the argument about increased expense is absurd. Officers, it is clear, must have a civilian dress, and if they be forced to wear it less, and their uniform more, the *saving* will be inappreciable. But, setting this aside altogether, the health and comfort of officers in India are surely quite as urgent

as mere professional and military appearance. Now any person can imagine what is likely to be the result of compelling every officer to do office work all day in his thick cloth uniform! It has been hinted by those whose experience is not trifling, that if Sir William Mansfield will make the tour of the military offices in Bombay he will discover that shirt sleeves are commoner than shell jackets, and this, not from slovenliness, but on account of the climate.

ANOTHER CASE OF ANTIMONIAL POISONING.

AN important toxicological inquiry has been conducted this week at Yeovil, in which the medico-legal relations of antimony were narrowly examined. The epidemic character of crime has often been a subject of comment, and the frequent occurrence of cases of suspected antimonial poisoning at this time cannot escape attention. The Liverpool inquiry is actively progressing at this moment; several recent attempts have been chronicled; and during the last week it would seem that the chief toxicologists of the kingdom have been employed in searching for antimony in the bowels of the dead. In the Yeovil case, the suspicions have not been conclusively confirmed, but enough was shown to vindicate the sagacity of the physician in attendance, Dr. E. C. Garland, who had the discretion to discern symptoms of irritant poisoning through an obscure *entourage* of conditions due to natural disease, and the courage to act on his belief. The patient was a Mrs. Peters, a young woman of twenty-eight, the wife of a draper at Yeovil. Dr. Garland was called to attend her towards the end of last year; she was then suffering from irritation of the bowels and stomach. She improved, and for a time left his vicinity. On the 10th of June, Dr. Garland was again called in to treat the same distressing symptoms. The disease appeared to yield to the remedies applied one day, and to return with violence the next. This inspired Dr. Garland with suspicion, and on the 26th he obtained some of the evacuations, and found traces of antimony. He then forwarded some of the urine to Mr. Herapath, of Bristol; and that gentleman also found antimony in the urine, and prepared a specimen of the red sulphuret for exhibition. Dr. Garland then privately communicated the facts to the superintendent of police; but on the following day Mrs. Peters was seized with acute pains in the abdomen, and on the 5th of July she died.

The family objected to a post-mortem examination, although informed of the antecedent discovery of an irritant poison; and an inquest was ordered, followed by adjournment for post-mortem and chemical analysis. Dr. Garland's stated opinion as to the cause of death arising from perforation of the intestine was borne out by the ulceration of the stomach and the presence of purulent matter and food in the cavity of the abdomen. Mr. Herapath testified that the liver was "in an extraordinary state, being pulpy and granular, and crepitating when cut through with scissors." The stomach was described by Mr. Herapath as being the subject of "a patchy inflammation such as is found to occur after the action of an irritant poison, and that parts of the intestines were in the same state." The antimony contained by the urine would account for the inflammation. No antimony, however, was found on analysis of the intestines and stomach. On that point Mr. Herapath said: "There seems to have been antimony passing away from the body; and supposing the urine and viscera to have come from the same body, if sufficient time had passed for the whole to escape, of course there would not be any found. All that I can assume is, that antimony was passing away; and, from the appearances, I believe an irritant had been at work on the intestinal canal. It has not been discovered how long antimony will remain in the system. Antimony has not been long used as a poison, and it is not known what time it takes to disappear."

The complete examination of the body, however, showed long-standing and extensive disease of the liver, with considerable disease of the mesenteric glands, and some tubercular deposit in the lungs.

At the end of a very long inquiry, which was somewhat complicated by attempts to establish tubercle in the first stage as the cause of death, and the enunciation of some ingenious pathological surmises as to the possible origin of the intestinal inflammation and perforation of the stomach, the jury returned a verdict to the effect that "Sarah Peters died from a complication of diseases, accelerated by the presence of some irritant, but how or by whom administered there is no evidence before the jury to show."

The case is one of painful interest; and whatever may be doubtful in it, one thing at least is certain: the sagacity and the courage of the physician who so quickly discerned the symptoms of poisoning through all the clouds of accompanying disease, and so boldly performed his public duty by endeavouring to detect and prevent the crime. Skill so exercised and judgment so guided elevate medical practitioners to the highest rank amongst the guardians of public safety and the enemies of crime.

DEATH FROM CEREBRAL EFFUSION.

AMONGST the nicest questions which the medical witness can be called upon to decide are the issues of death following injury, when, upon the performance of a post-mortem examination, a cause of death is discovered, which may be attributed to the injury, but which might also have had a spontaneous origin. We learn from a local paper that a charge of manslaughter against John Norris, at Uttoxeter, for causing the death of his wife by violently beating her about the head has "caused the greatest excitement which any case of the kind ever did;" and the evidence of the medical witness in this case is apostrophized with notes of admiration and expressions of surprise. Mr. Elkington, the surgeon who performed the autopsy, found the principal lesions in the brain. He says:—

"On examining the brain, I found a large clot of blood upon the right side of the organ; I measured it, and found it to be three ounces. The brain was remarkably soft; the right ventricle was almost filled with serous fluid. There was no congestion particularly about the brain; the dura mater was not congested. As I have said before, I found no external mark on the head; but on cutting through the scalp on the left side I found a mark. It sometimes happens that the extravasation is on one side and the laceration on the other. The right eyelid was paralysed."

Under such circumstances, finding the right ventricle filled with serum, the whole substance of the brain being softer than usual, and "without any trace externally or internally of any violence to have caused death," Mr. Elkington could not conscientiously aver that death arose from any other cause than apoplectic extravasation of blood. This opinion appears to have been received on all sides with great surprise. This astonishment would be greatly modified were the critics aware of the difficulty of separating the influence of coincident causes in producing a common effect. In any case, Mr. Elkington has done well to deliver his grave, conscientious judgment, rather than allow himself to be swayed by the popular belief, or moved by common clamour.

MEMORANDA FROM JAMAICA.

MORTALITY OF COOLIE EMIGRANTS.

THE following letter on the above subject, suggesting a dietetic remedy, was recently addressed by the Colonial Secretary of State to the Governors of our West India Colonies:—

"Downing-street, April 18th, 1860.

SIR,—In a correspondence which has passed between this Department and the India Office respecting the mortality

which has recently occurred amongst the coolies in St. Lucia, Sir Charles Wood has expressed an opinion that the Indian coolies are likely to suffer from the loss of betel, to the consumption of which they are accustomed in their own country; and Sir C. Wood thinks it probable that an adequate supply of this article would not only be likely to promote the health of the immigrants, but that it would remove the temptation to consume vegetable substances of an unwholesome quality.

Under these circumstances, I have to request that you will take such steps as may seem to you proper for placing a supply of betel-nut within the reach of coolies, at a reasonable price.

I have, &c.,
(Signed) NEWCASTLE.

Governor Darling, &c. &c., Jamaica."

LEPROSY.

The condition of the unfortunate sufferers from leprosy, and other forms of malignant ulceration, is surely discreditable to a Christian community, if the subjoined statement from the *Jamaica Advertiser*, of June 27th, be correct:—

"It is now more than six months since the Legislature of this island, with a liberality which most persons were not disposed to give them credit for, made provision for the reception and support of persons afflicted with leprosy and yaws; and the Government, with all its vaunted alacrity in carrying out measures for the public welfare, has not yet thought proper to exercise the power vested in it under the Act; while, on the other hand, the unfortunate victims of leprosy and yaws are to be met with in every part of the island—nay, at our very doors—seeking charity. Indifference on the part of the Government in a matter of such vital importance to the inhabitants of this island deserves the severest censure; and we trust that at the next meeting of the Legislature some honourable member, unencumbered with official obligations, will cause to be made known to the public why it is that so much delay has taken place in carrying out the provisions of the Act in question."

Medical men in Jamaica and other West India islands might contribute valuable aid to Professor Virchow, of Berlin, whose "Appeal on behalf of the History of Leprosy" was brought under the attention of the recent International Statistical Congress, and well deserves the cordial co-operation of the profession.

PUBLIC HOSPITAL AND LUNATIC ASYLUM.

It would seem that at length the object for which Dr. Bowerbank has, in spite of all difficulties and obstructions, laboured so energetically during the last two years—viz., a thorough and impartial inquiry into the condition and management of these institutions—is likely to be soon effected. The Committee of the Legislative Council of the island, to which the subject had been referred by the Governor, have recently reported their opinion, "that a commission should be appointed to inquire into the allegations respecting the government and management of the Public Hospital and Lunatic Asylum, and that such commission be composed of individuals entirely unconnected with the island."

As the formation of a school of medical instruction in connexion with the Public Hospital is at present openly canvassed, and is favourably entertained by men in authority, the necessity of a preliminary searching investigation into the whole matter is the more apparent, so that all grounds of public distrust may be effectually removed, and the two institutions, against which such grave charges have been made, be placed on the best possible footing as regards their salubrity and general *régime*, executive as well as administrative.

DEATH OF M. LEPERDRIEL.—M. Leperdriel, whose name has for many years been before the French public, has just died at his seat in the neighbourhood of Paris. Originally a herbalist, and subsequently a diplomated pharmacien, he made a large fortune by introducing into medical practice modes of blistering and establishing issues which became extensively known and used by dint of clever advertising. It was he who first introduced the india-rubber stockings, which have since been so much improved as to throw the original invention into the shade.

Correspondence.

"Audi alteram partem."

IS THE HEART ORGANIZED FOR PERFORMING OF ITS OWN ACT THE MOTION OF DIASTOLE AS WELL AS THAT OF SYSTOLE?

(LETTER FROM MR. J. MACLISE.)

To the Editor of THE LANCET.

SIR,—Having, in the communication lately addressed to you and your professional readers, stated some of the anatomical reasons which induce me to believe that the heart's pectoral throb is due solely to its diastolic or expanding motion, the above question next suggests itself to me, and this I have no hesitation in answering negatively, according to the structure and mechanism of the organ.

In interpreting the facts which I adduce as supportful of this opinion, I find myself, happily, under no necessity for disturbing the existing very rational, because demonstrable, ideas entertained respecting muscular action in general, whether of the voluntary or involuntary class of organs. We see that a muscle, when put in action, manifests a simultaneous contraction or shortening of its fibres between its points of origin and insertion; and that, on being extended, it relaxes, and is then wholly passive. To this rule, at least, there is no real exception; and hereupon we conclude that no *single* muscle or muscular viscus in the living body is or can be active in contrary directions for producing opposite conditions. Relaxation appears, in regard to contraction, a negative condition, just as shadow is in regard to light. Though we give the names flexor, extensor, levator, depressor, abductor, adductor, constrictor, dilator, &c., to different individual muscles, we know that these names have reference only to the part moved, for the several actions of these muscles are generically the same, being all contractile. When a part is capable of being moved in opposite directions, or set in opposite conditions, we find invariably that the muscular agents are placed in opposite pairs in reference to each other and to that part: the flexor contracts and acts on that bone in one direction; the extensor does the same to draw the bone in a contrary direction; and when the one is active, the other is passive or permissive. If the two muscles relax together, the bone lies quiescent; if the two contract, the bone becomes fixed; and if from between both we remove the bone, the result is similar to what occurs when we disconnect and remove the beam of a balance from its scales: the two muscles can no longer alternate in action, having lost their hold of the mediate member; and, now shrinking or contracting together, they become ever after incapable of extension. It is evident, therefore, that extension on the part of any *single* muscle is not effected by its own vital act: the motion does not obey volition, because the muscle is not organized for performing any motion but that which contraction effects; and that which is not possible for the voluntary muscle to do must be equally impossible with the involuntary. As extension and expansion are but different forms of the same kind of motion, I would apply the last observation to both, and add that neither motion can be performed by *one* muscle, unless by the contractile act of an antagonist.

Besides the antagonistic action of oppositely placed muscles being necessary for effecting contrary motions in a part, there is an anatomical condition no less required for the same, and one which invariably obtains: the opposing motor powers inserted into the part to be moved must have their origins in another fixed part. This is the relation between the members of the osseous and the muscular systems everywhere; and, on considering well that relation between those systems, I become struck with the conviction that herein alone exists a provision for effecting those motions. In the osseo-muscular thorax only do I recognise that mechanism which can effect expansion and contraction of enclosed space; and, on comparing the thorax as a motor organ for acting inspiratorily and expiratorily, with the heart as an organ supposed to be capable of acting diastolically as well as systolically, the difference between their respective mechanisms is sufficient to prove that the heart *per se* cannot dilate itself. The inspiratory diastole of the thorax can be effected by a certain class of muscles, because these having insertions externally in the costal walls take their origins from skeletal parts which do not enter into the composition of the

thorax; but the diastole of the heart cannot be effected by the muscular parts of that organ, which they form by having origin and insertion in itself.

The heart, as a muscular recipient organ, is absolutely isolated from all others in the body which by structural connexion might be supposed to effect its diastole. In whatever manner we dissect it for displaying its muscular layers, the only action which we can reasonably conceive these to be capable of performing is that of contraction, and this results in systole by reason of the united efforts of all those layers or enclosing bands. In this respect the heart is circumstanced like all the hollow muscular-coated viscera. These, we know, can contract for expulsion of their contents, and we know, too, that as recipients they must expand; but still we do not require to recognise in their walls a muscular mechanism whereby dilatation is accomplished. It is true that their expansion is evidently effected in a different mode from the diastole of the heart, occurring suddenly and dynamically, as instanced in the pectoral throb; and hence we are naturally inclined to seek for the agency of this motion in the substance of the organ, but hitherto our search has been conducted in vain. However we reason (*à priori* or *à posteriori*) upon the phenomenon of diastolic motion, the cause lies unrevealed by the heart's structure, and must ever remain so; for, in fact, the organ is not empowered either by vital or physical component parts to accomplish it.

It is certain, nevertheless, that diastole, as an effect, must be attributed to some cause; and, pressed by this necessity, it has been assumed by some physiologists that the motion is due to an elastic structure pervading the substance of the heart; but such structure is not demonstrable. By others it is imagined, that while some of the muscular bands are the agents for systole, a different set are the agents for diastole; but this idea is clearly untenable, for not only are those bands not paired antagonistically, but they are all united and concerted for the same act—viz., systole, and for no other. The belief that the heart, as a whole, is capable of acting for diastole and systole by the *same* muscular fibres cannot be entertained for reasons above mentioned; and to suppose that the momentum of the venous current *à tergo* is that which distends the heart's cavities is to mistake the effect for the cause, as may be proved by the law in physics: when vacuum is attempted in the interior of a pump, the fluid rises and frustrates the realization of it; and, as the heart's diastole cannot be effected without threatening vacuum in its cavities, the venous blood must of necessity rise and enter the heart. This, therefore, must be regarded as one cause of motion in the blood; but what is the cause of diastole is still a mystery.

While all the hollow viscera appear organized for active contraction, their dilative increase of capacity is manifestly effected by extrinsic causes, and these are of different kinds, according to the functions which the organs respectively serve. Dilator muscles none of them exhibit. They passively receive their contents, and do not *take* them in the sense of *action*. The pharynx is distended by the aliment, and, contracting on this, passes it into the œsophagus, which tube is in turn similarly distended, and so on throughout the entire canal. The vermicular motion of the bowel is a manifestation of muscular contraction on the *passant* distending contents. The stomach, urinary bladder, and gall sac swell by, and according to, the quantity of their respective contained fluids. The uterus increases in capacity by development *pari passu* with that of the fœtus. In these instances, we feel satisfied in having referred effect to its only true causation; but not so in regard to the heart, for who will assert that the returning blood is the agent of that organ's diastolic motion, when it has still to be proved that the afflux to it is not actually the effect of that very motion, and just as the ingress of air into the lungs is the effect of thoracic diastole? The inspiratory muscles, acting on the mechanically constituted thorax, declare themselves to be the prime movers of inspiration. To what agency are we to attribute the heart's diastole, since the organ itself is vitally incapacitated for performing the motion which, as such, must be due to some force? To this inquiry the result of my own researches and reading enable me to propose unhesitatingly the following answer—viz., *the heart, as prime mover of circulation, is developed in diastole*; this is its physical set or state *ab initio*; and, as secondary to this state in developmental time and process, the organ becomes endowed with vital energy—with muscular, contractile, systolic power. The physical state or diastole is, throughout the term of life, intermittingly antagonized by the vital act or systole; and whereas the latter is egestive of the blood through the arterial channels, the former must of necessity be ingestive of the blood from the veins, according to the disposition of the cardiac valvular apparatus.

I would, then, Sir, submit it to you and the profession whether or not the anatomical facts and the physiological phenomena accord with these my ideas of the heart's action and motions? I ask upon what direct evidence have inquirers, from the time of Harvey to that of Hunter and to the present day, agreed to believe that the heart's pectoral throb is systolic, and what are the facts which do not declare the contrary? Have physiologists and physicians been all this weary time but labouring to build the pyramidal theory invertedly? If this should one of these days prove to be the only result of their observations, and it will, then the followers of Laennec will have to read through the stethoscope a long recantation of what they imagine they hear by means of that instrument—"Qui enim vias naturæ noverit, is deviationes etiam facilius observabit."

I am, Sir, yours obediently,

July, 1860. JOSEPH MACLISE, F.R.C.S.

WHAT IS THE SIGNIFICATION OF THE HEART'S THROB?

(LETTER FROM DR. W. H. BROADBENT.)

To the Editor of THE LANCET.

SIR,—I venture to request some little space in your columns, for the purpose of controverting the arguments advanced by Mr. Maclise in support of his opinion that the heart's throb is diastolic, and to show that it can be, and is, systolic.

Taking his two propositions, I find the reasons adduced to prove the first, "the heart's throb cannot be systolic," to be—

1. The impossibility that the apex should strike against the left thoracic wall.

2. The fact that the beat of the heart and the pulsation in the distal arteries are not synchronous.

The apex may not strike against the parietes of the chest, and yet the impulse there felt may be systolic, as will be seen below; and synchronism between impulse and pulse is so far from being a necessary condition of the impulse's being systolic, that it would be incompatible with this fact. The arteries being elastic, pulsation in them at any distance from the heart must succeed systole, and, if impulse is systolic, impulse; and this succession can be traced from the heart along the arteries: the carotid pulse is just after the impulse, the radial pulse just behind the carotid.

The second position, that "the heart's throb can be caused by its diastolic motion," rests, in connexion with some *à priori* considerations, upon an experiment which shows that if the right ventricle be suddenly distended, an impulse can be perceived through the walls of the chest; but it is not explained by what force this distension, sudden and forcible as it must necessarily be, is to be produced; or, supposing it to be exerted by the "rising venous tide," how it is that the veins of the neck, which so readily show regurgitation from the right ventricle, do not also give some evidence of the tension they must suffer.

Numbers of facts (physiological and pathological) might be brought forward which this theory would utterly fail to account for; but a brief description of what is seen when the heart is exposed in vivisection will give it the most complete answer. And here I am compelled to say that I have observed facts the existence or occurrence of which Mr. Maclise denies by implication. I have seen blood flow "per saltum" from a divided artery while the heart has been beating under my eyes, and I have seen distinct and strong jets from the aorta after the heart had been detached and placed in water. The movement of the heart, therefore, under these circumstances, is *not* a mere spasm and relaxation without change in the capacity of its cavities; there is a real though imperfect diastole and systole, and conclusions as to the normal heart's action may safely be drawn from what is thus witnessed.

When the sternum and costal cartilages of a living animal are removed (artificial respiration being kept up by means of bellows), before the pericardium is opened, there may be observed a sudden bulging of the body of the ventricles, accompanied with a shortening, then a more gradual subsidence and elongation, of the heart in its containing sac. This is more distinctly seen when the pericardium is opened. During contraction, the apex is approximated to the base, so that the heart becomes more globular; at the same time it becomes more firm, and there is an evident bulging of the body of the ventricles, resulting from the shortening in their axis, and the contraction

of their muscular fibres. It is this bulge, (the energy of which may be felt by placing the finger on the contracting heart,) and not the stroke of the apex, which gives the impulse felt externally. It is not supposed that the apex, or any other part of the ventricles, leaves the thoracic parietes and returns against them with a blow. During diastole, the heart lies along in the pericardium in contact with it at every point of its surface, and, where the pericardium is uncovered by lung, mediately in contact with the wall of the chest. The systolic impulse is caused by the rapid concentration of the muscular mass of the heart upon its base. There is no doubt that it is the right ventricle which is in contact with the side of the chest, and which communicates the impulse; but it is a part of it much nearer the apex than would be the case were the impulse diastolic, especially as there is a twisting motion from left to right during the heart's contraction, which brings the apex forwards. These observed movements, too, are in accordance with the known arrangement of the muscular fibres of the heart, the common centre or fulcrum of which is not the inter-ventricular septum, but the auriculo-ventricular septum and the roots of the great vessels.

Were there no possibility of direct observation, and were speculative deduction the only method by which the time and mode of the heart's impulse could be ascertained, the reasoning of Mr. Maclise might easily be refuted, and most of your readers would be able, at a minute's notice, to start unanswerable objections; while many have had the opportunity of watching the heart in action, and can bear testimony to the accuracy of the description I have given, so far as it goes; which description, I may say, is by no means my own in the sense of originality, but a mere record of personal observation according with the observation and interpretation of the great teachers of physiology.

I am, Sir, your obedient servant,

Upper Seymour-street, Portman-square, July, 1860. W. H. BROADBENT, M.B.

POST-PARTUM HÆMORRHAGE.

(LETTER FROM MR. J. HIGGINBOTTOM.)

To the Editor of THE LANCET.

SIR,—In your journal of last week there is a paper on Post-partum Hæmorrhage, by Mr. Richard Marley, of Bromyard; in which he states—"Many are the plans suggested as the best means for removing this horrid danger. One gentleman, a man of note, has, I believe, used and highly recommended the administration of ipecacuanha, from its nauseating properties lessening the action of the heart, and thereby decreasing the flow of blood to the bleeding orifices. I think the danger that an already almost faint and exhausted person must be in from the exhibition of a powerful depressant, such as is this drug, has been too much overlooked."

From the above statement I am induced to think that Mr. Marley cannot be informed of what has been written on ipecacuanha in post-partum hæmorrhage. I have never read any author who has recommended ipecacuanha in nauseating doses to diminish post-partum hæmorrhage. I wrote a paper in THE LANCET of June 28th, 1845, "On Ipecacuanha in *Emetic Doses*, as a powerful Restorative in some Cases of Exhaustion and Sinking." In that paper I related the case of a patient I attended with fearful hæmorrhage after the removal of the placenta in three of her confinements, in the years 1827, '29, and '31. In her third confinement I was afraid she would die. I employed the usual remedies, such as sudden application of cold water to the abdomen, pressure to cause contraction of the uterus, and administration of tincture of opium; and during the three hours I remained with her I gave her half a pint of brandy and a pint of port wine. Notwithstanding these remedies, it was very evident that she was rapidly sinking. It occurred to me that in her former confinements, when I had used the same means to check the hæmorrhage, there was no amendment until she had ejected the contents of the stomach. I was then most anxious that vomiting should take place, in hope of relief. I thought, as vomiting had been so beneficial to her before, I was in this case justified in producing it by giving an emetic. I directly gave her half a drachm of the powder of ipecacuanha; a full vomiting succeeded, and a large quantity of fluid was ejected. I was much struck with an expression of my patient, which I had several times heard before in similar cases after vomiting: after a deep sigh, she said, "Oh! I'm better; I'm better, now." The hæmorrhage ceased directly, and did not return; the symptoms of sinking subsided; and the patient appeared in her natural state of body, but very feeble. A little plain gruel was all the nutriment given her, and she gradually recovered from her weak state.

In extreme cases of uterine hæmorrhage, where other remedies have failed, I have continued the use of emetics, with success, in my own practice, and also in consultation. A medical man in this town, engaged in a most extensive obstetric practice for the last ten years, informs me that, having commenced the treatment at my suggestion, he never knew it to fail in checking the hæmorrhage, although he does not resort to it until ordinary means have proved abortive. From the confidence he has in the remedy, he never fears the result in the worst of cases. He related to me an instance. A lady in this neighbourhood had, after the birth of twins, the most uncontrollable flooding. An emetic was given her, but, not acting speedily, the fauces were irritated with a feather; vomiting ensued, and the hæmorrhage ceased immediately. Upon two subsequent confinements, when syncope was setting in, she exclaimed, "Oh, make me sick; I shall not be better till then." This was done, and the hæmorrhage and syncope ceased together.

The value of ipecacuanha consists in its emetic property in post-partum hæmorrhage, by exciting the contraction of the abdominal muscles and compression of the uterus, producing a powerful contraction of that organ. The extraordinary effects of emetic doses of ipecacuanha appear not to be generally known or appreciated, in acting as a powerful stimulant to the whole system, equalizing the circulation, promoting the secretions, and assisting each organ of the body to perform its normal functions. I know of no instance where ipecacuanha, acting as an emetic, has had a depressing effect; on the contrary, no remedy I am acquainted with has the same safe, quick, and satisfactory result in many cases of exhaustion and sinking.

I am, Sir, your obedient servant,

JOHN HIGGINBOTTOM, F.R.S., F.R.C.S.E.

Nottingham, July, 1860.

HYPODERMIC INJECTION OF MORPHIA.

To the Editor of THE LANCET.

SIR,—Under the above heading, in your journal of the 14th and 21st July, Dr. R. H. Bakewell and Dr. J. A. Bolton, have given the result of their experience of the hypodermic injection of morphia in neuralgic affections. While agreeing with both those gentlemen, that sickness and other untoward symptoms do sometimes occur, I beg to state that, so far as my experience goes, such is the exception, and not the rule, when this method of medication is adopted; and as I can give the results of some fifty cases of the above method of treatment for neuralgia, &c., I venture to speak with some confidence.

The form in which I employed this remedy was the solution of the London Pharmacopœia. Of this, I have been in the habit of injecting from ten to thirty minims, as near as possible to the seat of pain. The usual result of my treatment has been the procuring of sleep within half an hour, and subsequent relief from pain, especially when the larger quantity of solution was used. Sickness seldom followed; in some cases, however, this did occur with some severity, accompanied with itchiness of the skin, and the formation of small local abscesses. These abscesses I found troublesome, and slow to heal; but I can decidedly say that these untoward symptoms were not by any means such as to dissuade me from using the morphia hypodermically, in well-selected cases.

The permanence of the relief afforded by this method is a question upon which I would beg permission to say a few words. The notes which I have taken of the results of a considerable number of cases warrant me in saying that it fails to produce this desirable effect. True, immediate relief is nearly always obtained, and its influence upon the system is rapidly exerted; but a recurrence of the neuralgia frequently occurs, which a repetition of the injection fails to subdue. This fact, coupled with the unpleasant symptoms above-mentioned, will, I think, prevent its general use, if not in hospitals, at least in private practice.

Diseases of a formidable and intractable nature, such as delirium tremens, tetanus, &c., are cases where the employment of this form of treatment may possibly be attended with happy results, and in which the minor objections of sickness, &c., may be safely overlooked.

I am, Sir, your obedient servant,

JOHN H. JEPHSON, M.D., M.R.C.P.I.,

Physician to the Great Northern Hospital and Westminster General Dispensary.

Conduit-street West, Hyde-park, July, 1860.

DR. BRAXTON HICKS' METHOD OF VERSION IN PLACENTA PRÆVIA.

To the Editor of THE LANCET.

SIR,—To add to the interest of the above-mentioned subject, I forward to you the following account of a case treated according to the plan recommended by Dr. Hicks:—

On the evening of July 28th, I was called by a midwife to see Mrs. F——, who was said to be flooding. She is a stout, healthy person, aged twenty-five, and within three weeks of the full term of her third pregnancy. She has suffered from hæmorrhage twice during the last five weeks. Yesterday it recommenced, and this evening a large quantity of blood has passed with very slight labour pains. I arrived about a quarter-past nine P.M. Blood was slowly passing away. She appeared pale, and the pulse was feeble, but not rapid. I immediately made an examination, and found the placenta presenting, the os uteri being dilated at least two inches. I introduced my hand into the vagina, when a strong pain came on, forcing the placenta onwards. I grasped it, and tried to assist its downward progress, at the same time a free discharge of blood was taking place. Fearing I should not soon succeed in removing the placenta, and should have some risk from hæmorrhage during its separation, I examined carefully for membranes, and succeeded in detecting high up, posteriorly, a smooth surface, through which I could feel the head of the fœtus. I pressed the head upwards, at the same time manipulating with the other hand on the abdomen. I soon felt the outlines of the arms, and, rupturing the membranes, I directly managed to hook down a knee, which I drew well through the os uteri. The hæmorrhage then ceased. I gave freely of brandy-and-water, with a dose of secale, and did not assist further the delivery until about twenty minutes had elapsed, and the pulse had become moderately full. I now used slight traction with the pains, and in a few minutes the child was born. The cord did not pulsate from the first. I think the child had been dead some time. It was small. The placenta passed immediately, and the uterus contracted well without hæmorrhage. The midwife, who had been in attendance since four P.M., calculated she had seen over two quarts of blood passed. I saw in the chamber utensil above a quart. The case is progressing favourably.

The placenta on examination was found lacerated, one edge of the rent corresponding with the insertion of the cord. As the placenta was in this case almost centrally situated over the os uteri, I believe Dr. Hicks' plan will be found generally useful, and that turning may be performed without introducing more than the fingers into the uterus. It is stated by some that hæmorrhage in these cases takes place from the placenta, where it is disconnected from the uterus. In this case I am as certain as I well can be that the blood did not pass from the exposed placenta, but from the inner surface of the uterus.

I remain, Sir, yours truly,

JOSEPH BANCROFT, M.D.

St. James'-street, Nottingham, July 30th, 1860.

*** In Dr. Lee's "Clinical Midwifery" there are related many cases of turning without introducing the hand into the uterus.—ED. L.

QUININE IN SCARLATINA MALIGNA.

To the Editor of THE LANCET.

SIR,—Having read in your journal of July 28th a brief account of scarlatina maligna proving fatal in about forty-eight hours, I venture to ask the writer of the case in question why he omitted from his long list of remedies the only reliable agent, disulphate of quinine? He mentions diuretics, diaphoretics, narcotics, and saline mixtures. He blistered the temples and nape of the neck, and applied cold to the head. But, without wishing to impugn his treatment, I cannot express any surprise at the result. For those who may have such cases to meet—and no doubt they occur only too often—I can forcibly recommend the use of quinine. My attention was first called to it, in this disease, by the excellent little work of Mr. Peter Hood, in which he so strongly urges its adoption in all forms of scarlet fever. I have put his plan to an extensive test in a large dispensary practice, and have every reason to bear testimony to its success. Without intruding further on your valuable space,

I am, Sir, your obedient servant,

County Ophthalmic Hospital, Maidstone, July, 1860. J. HAWKES.

SOCIETY FOR THE RELIEF OF WIDOWS AND ORPHANS.

To the Editor of THE LANCET.

SIR,—The publication of your request to the subscribers to the Royal Medical Benevolent College to elect forthwith Mrs. Jenner, the widow of the grandnephew of the celebrated Dr. Jenner, has induced me to consider how it has happened that she is placed in so unfortunate a position as to be indebted to a body of friends for an annuity of £15 a year, when for sixty-three years previously to the death of her husband a society had been established, known as the "Society for the Relief of Widows and Orphans of Medical Men in London and its Vicinity." The object of this Society is to grant, half-yearly, sums in relief of those whom it assists—viz., the widows and children of its deceased members. I, therefore, urge upon all practitioners in medicine residing in Middlesex, or within seven miles of the Post-office, to consider this fact, that for want of a subscription of two guineas a year, this lady is thrown upon her friends, and cannot be elected at the "College" till after three years' canvassing for it; whereas, had her late husband been a member of the "Society" during at least two years prior to his decease, Mrs. Jenner would have been long since in the receipt of half-yearly relief, which would have done much towards providing for her necessities, and would have been accepted by the College as an income of more than is required of their candidates.

Let all, then, become members of the Society, and give their votes to Mrs. Jenner for the College, as you asked last week; so shall the two societies prosper, not in antagonism, but as relieving the same distress in different ways. The secretary, Dr. Merriman, 53, Berners-street, will forward proposal papers to any who ask for them.

I am, Sir, your obedient servant,

July, 1860. A SUBSCRIBER TO THE SOCIETY.

PARISIAN MEDICAL INTELLIGENCE.

(FROM OUR SPECIAL CORRESPONDENT.)

THE doctrinal discussion was resumed with considerable spirit on the 24th ult., at the Imperial Academy of Medicine. M. Gibert, one of the medical staff of the Hôpital St. Louis, and a thorough-bred vitalist, reopened the debate by observing, that in his opinion the real question, whether life is a cause or an effect, had not been touched by any of the preceding speakers, and that any discussion which had not this main question, and its solution, in view, was utterly thrown away. M. Gibert's own attitude towards his fellow vitalists, including M. Trousseau and his school, was anything but friendly. He had taken umbrage, as it seemed, at a very homely illustration made use of by M. Trousseau, when quoting the words of M. Dollfus; the expression, "*pot-au-feu*," applied as a simile in a grave discourse was, he considered, most inappropriate and undignified. Here M. Trousseau came to the rescue of his maltreated metaphor, and covered the retreat of his "*batterie de cuisine*," giving a sort of Parthian back-thrust in return for one of M. Gibert's cuts at M. Dollfus as being a "*triste autorité*," by saying, "Yes, but *he*, at least, had *beaucoup d'esprit*." M. Gibert's object had been to prove that *his* quality of vitalism was the only genuine article, and that of MM. Bouillaud, Trousseau, and Co., was of very inferior brand. He made, however, one good observation, which was that all the organicians must, perforce, adopt somewhat of the vitalist theory, in order to explain the source of their "disposition to function" in the healthy organ; and, in fact, they must either leave their organ in stationary quiescence, or else admit that the animating motor influence was, at the least, a principle akin to the so-called "vital property."

A few more words followed from M. Trousseau to explain that, though he was a *vitalist*, he wished it to be understood that he was no *animist* in his opinions; the latter doctrine implied that the functions of the body were under the immediate influence of the "*anima*," or soul. This view he considered absurd, as it involved the attribution of a soul to the cabbage, which possessed organs and life as well as the man.

At this moment, M. Bouillaud (evidently a little susceptible on the subject of animism) interrupted the speaker, and said

that he, as a pure vitalist, must eschew companionship and association with both M. Gibert and M. Trousseau; they were heretics in the matter of vitalism, and disguised heretics—wolves in sheep's clothing; that they did not hold to the principles of Stahl, &c. Here evidently had been M. Bouillaud's error; in the appreciation of M. Trousseau's views, he had fancied him a staunch Stahlianist, whereas the Professor of the Hôtel Dieu had never, in his "rehearsal of belief," admitted more than a "*principe immatriel*," as the foundation of his vitalist faith.

The minor debates ended, M. Malgaigne ascended the tribune, and amid a profound silence delivered the most eloquent address I ever had the good fortune to hear within the walls of the Academy. In spite of a disagreeable southern accent, a nasal tone, and a total lack of "presence," M. Malgaigne's charm and power as an orator are most undeniable. His wit, quickness of perception, brilliant illustration, and happy citations, added to great rhetorical skill and knowledge of effect, make him a most potent advocate, or most formidable opponent, in any medical question. It is unfortunate, however, that none of these qualities can be conveyed in an epitomized *compte-rendû*, and your readers must be contented with the raw material, bereft of its fashioning, and consequently as much like the original as would be a heap of pulverized marble to the statue it may formerly have composed. M. Malgaigne began by rallying the head of the chemical school, M. Poggiale, on the subject of his antipathy to the word *chimiatre*. "Remain, then," said he, "in your chemical province, and be simply a chemist; but encroach one foot upon our domain of medicine, you will incur the penalty, and we shall ruthlessly brand you a *chimiatre*. Chemistry has done much for medicine; she has been a faithful handmaid, but like all handmaids must be taught her proper place, and be kept there; her powers are limited, and this she must not forget." M. Poggiale had expressed a hope that more ample justice would be rendered by the future to chemistry and her services to medical science than the present seemed inclined to accord. M. Malgaigne would remind the learned Professor that the future is often a more impartial judge than the present, and that although it often raises a throne for the great genius, yet as often does it dig the grave of the dreamer. M. Poggiale had boasted of the power possessed by chemistry of forming, by synthesis, one or more of the principles produced in the human body, and would thence, by analogy, argue that chemical agency is alone competent to the formation of the rest. "I grant you," continued M. Malgaigne, "that a few of the crystallizable products of the human laboratory may be mimicked by chemical aid, but there are other materials in the body besides chemical products, and when we come to the formation of tissue, more than crystallization is needed. We want for the organization of tissue, the touch of the weaver; we want the warp and woof. Can chemistry furnish these? No, she cannot, in spite of all the boastful encomiums of her devotees. There still is, and ever will be, between the operations of nature and those of chemistry an unfathomable gulf, which no effort of man will ever succeed in sounding. The chemists generally are too fond of calculation, and too little of experiment, and from this fault even M. Lavoisier was not free. Take their many years of fruitless search after the source of animal heat as an illustration. In this they remind me forcibly of the story told of the hydrographers of Frederick the Great, who, when consulted by his Majesty on the subject of a well he wished to sink at Sans Souci, and requested to point out a likely spot for the finding of a spring, fell to calculating. They took into account the nature of the soil, and its geological conformation; the possible interference of chance disarrangements, and all the other contingencies, from the probable to the impossible, were allowed for, the calculations were made, and a site was indicated. A pit was dug, and no water was found. Fresh calculations, and similar results. At last Frederick, a positive man, got tired of the philosophers, and sent for a little pump-maker in the adjoining village. The illiterate fool, with no knowledge of geology, mathematics, or the doctrine of chances, pointed out a spot; a well was sunk, and water obtained in abundance." M. Malgaigne seemed to wish that modern chemists had a little more of the pump-maker in them than they have. "M. Poggiale does not admit the existence of a vital force in the economy; and yet he speaks of life and its presidence over the functions. This surely was more than a half-vitalist admission." M. Malgaigne then reverted to the works of one of the leading organicians of the day, M. Rostan. "Here," he observed, "the theory of vital property is rejected, and the doctrinal datum of organs endowed with 'disposition to function' maintained; a healthy organ implying a healthy function, an unhealthy organ a deranged function. How does this theory explain death when no change of structure, no organic lesion can be detected; or how, that of two grains of wheat taken from a mummy-case, neither distinguishable from the other in appearance or structure, both organically the same when planted, one will die and the other grow and fructify. Thanks to the organicians and their infamous treatment of pneumonia by bleeding and leeching—thanks to their sacrifice of human life thereby, we have seen the day when the statistics of homœopathy have been laid by the side of our own, and the results have not been what they had a right to be."

"It is a falsehood!" roars out M. Barth, of Beaujon Hospital, "and the statistics were untrue."

"So I trusted, and so I believe," went on M. Malgaigne, "but the insult has been offered to the profession through you, and the credulous, unenlightened section of the public does not stay to sift facts; and the report, untrue as it is, will have already borne its fruits. The vitalists, on the other hand, cure pneumonia perfectly well without bleeding, and lose an infinitely smaller proportion of cases."

An interruption by M. Bouillaud—"That is inexact; and were you attacked to-day with severe pneumonia, and not bled, I think we should not have the pleasure of hearing you speak again in the Academy."

"That I should be sorry for myself also," replied the orator; "nevertheless I have not always been of the same opinion regarding bloodletting. In my days I have bled, cupped, and leeched with the best of my contemporaries. I began as Broussais' *chef de clinique*, I continued the system through part of my hospital career; but I am proud to say I know better now. I have hardly used even leeches for the last six years, and I am well satisfied with my change of opinion. I believe that your organicism, carried to the bed-side, blinds the physician, making him neglect the more important general indications in order to attend to the more trifling local manifestation."

After citing two cases illustrative of the superior value of the general vital indications over the local organic condition in the formation of a prognosis, M. Malgaigne terminated his brilliant speech by a short consideration of the character of vital force. "Its alliance," he said, "with caloric and electricity is indisputable. It is, like them, a special agent, possessing both affinity and attraction for matter, but independent of it and separable from it; the dead body differing from the living man as the uncharged Leyden jar differs from the charged one."

The meeting broke up considerably later than usual. There will probably be no discussion next week, as a new member is to be elected, and this ceremony is performed with closed doors.

A Russian, of the name of Lukomski, some months ago requested permission of the head surgeons of the two great venereal hospitals here, the Midi and Lourcine, to continue in their wards a method of treatment which he declared had succeeded in Russia, and especially in an hospital at Simpheropol, where he had been allowed to experiment. The plan was based on the hypothesis of the incompatibility in the system of the venereal and vaccine virus, and the primary object of the treatment was stated to be the accumulation of the latter in the blood—this to be effected by repeated vaccinations, to the extent of nine or ten consecutively. A committee, consisting of MM. Cullerier, Follin, and Alphonse Guérin, was named some weeks back by the Society of Surgery, for the purpose of examining the results obtained, and the report was presented on Wednesday last. I am informed by the reporter, M. Guérin, in whose wards at the Lourcine part of this investigation was conducted, that the failure of M. Lukomski's experiments has been complete, and that the "anti-syphilitic power of vaccine" has been proved to be a myth. The idea is not a new one, and was, years ago, worked threadbare by Sigmond, in Germany.

ST. MARY'S HOSPITAL.—The students of the Medical School of St. Mary's Hospital have testified their sense of the kind and constant assistance rendered to them by the dean of the school, Mr. H. Spencer Smith, by presenting to that gentleman, on his retirement from office, a handsome piece of plate, weighing 101 oz. and suitably inscribed. The lecturers of the school have also recently marked their feeling of the value of Mr. Smith's services in organizing and directing the medical school from its first commencement, by the presentation of a handsome silver-gilt inkstand, inscribed "To Henry Spencer Smith, late Dean of St. Mary's Medical School, from his grateful colleagues."

Parliamentary Intelligence.

LORDS.—*Friday, July 27th.*—The County Coroners' Bill, No. 2, was read for the second time.—Lord Chelmsford explained that the intention was to regulate the remuneration by salary, and to remove the power of election from the county voters.—The Lord Chancellor said that the responsibility of removing a coroner where incapacity was proved might become critical, but it was one from which he would not shrink.

Monday, July 30th.—The Medical Act Amendment Bill was read a third time, and passed. Also, the Registration of Births (Scotland) Bill. The County Coroners' Bill passed through committee.

COMMONS.—The Lords' Amendments on the Criminal Lunatics Asylum Bill were considered, and agreed to.

Medical News.

ROYAL COLLEGE OF PHYSICIANS.—At the Comitia Majora, held on Friday, July 27th, the following members of the College were admitted into the Fellowship:—

John Peat, M.D., Bombay.
Alexander Armstrong, M.D., R.N. Hospital, Malta.

ROYAL COLLEGE OF SURGEONS.—The following gentlemen having undergone the necessary examinations for the diploma, were admitted Members of the College, at a meeting of the Court of Examiners, on the 31st ult.:—

Atwood, William Alban, Aberystwith, Cardiganshire.
Bartlet, George, Culsalmond, Aberdeenshire.
Bell, Thomas, Uppingham, Rutland.
Burrows, Robert Thomas, Westbourne-park-place.
Coleman, Edmund Walter, Portsdown-road, Maida-hill.
Grant, Bernard John Mark, Newcastle-on-Tyne.
Hammond, Francis James, Sherborne, Dorset.
Hocking, Joseph, St. Ives, Cornwall.
Houghton, Frederick William, Portsmouth.
Lovegrove, James Francis, Maidenhead.
Marsh, Henry Thomas, Upton-on-Severn.
Merry, Robert Rosier, Hemel Hempstead.
Monckton, Alfred, Brenchley, Kent.
Pocklington, Evelyn, Walesby, Notts.
Pridham, John Williams, Llanelly, Carmarthen.
Sequeira, James Scott, Jewry-street, Aldgate.
Smith, Absalom Harvey, Palermo, Canada West.
Tanner, Mark Batt, Exeter, Devon.
Tofts, Henry, Cambridge.

The following gentlemen were admitted Members on the 1st inst.:—

Blake, Thomas William, Hurstbourne Tarrant.
Camerford, Edmund Henry, Kilkenny.
Cape, Joseph Thomas, Cheltenham.
Chune, Henry Charles, Colebrookdale, Shropshire.
Dutton, Douglas John, Bristol.
Fagge, Charles Hilton, Guy's Hospital.
Foley, James Joseph, Cork.
Keele, Charles Ferdinand, Highbury.
Lyon, Isidore Bernadotte, Euston-square.
Mallett, William James, Bolton-le-Moors.
Nedwill, Courtney, Magherfelt.
Reid, James, Exeter, Devon.
Richards, John Smith Crosland, Bedford-square.
Smith, Robert Harman, Halifax.
Staples, Francis Patrick, Wexford.
Trotter, Arthur Edwin Hutchinson, Stockton-on-Tees.
Truman, Edgar Beckit, Nottingham.
Williams, Richard, Kingston Bagpuize.
Williamson, William Henry, Wimbledon.

APOTHECARIES' HALL.—The following gentlemen passed their examination in the science and practice of medicine, and received certificates to practise, on

Thursday, July 26th, 1860.

Evans, Benjamin, Duffryn, near Newcastle Emlyn, South Wales.
Gimson, William Gimson, Walton, Leicestershire.
Harper, Henry Lewis, St. Luke's Hospital.
James, Edwin Matthews, Shrewsbury.
Samuels, Arthur, Eldon-place, Liverpool.

For an Assistant—

Bailey, Edward Lee, Maida-vale.

The following gentlemen also on the same day passed their first examination:—

Carne, Decimus, King's College.
Date, William, King's College.
Gwyne, Edmund, London Hospital.
Lumley, Bartholomew, King's College.
Meggy, Frederic, Guy's Hospital.
Morgan, Herbert M., King's College.
Morrish, Thomas F., St. Bartholomew's Hospital.
Owen, Richard Jones, St. Bartholomew's Hospital.
Taylor, Daniel, Bury, Lancashire.

ARMY MORTALITY RETURNS.—Mr. Freeland has given notice of his intention to ask the Secretary-at-War whether the death-rates in the different regiments of the army, and the causes of death, cannot in future be given in the Registrar-General's quarterly reports. Hitherto the sanitary statistics of the country have been made imperfect by the abstraction of the military portion of the community. There are many obvious reasons which render it highly desirable that Mr. Freeland's proposition should be carried out. The army authorities boast, and we believe not without reason, of the accuracy and completeness of their health statistics. The next subject for congratulation we hope will be their publication and utilization.

APPOINTMENTS.—Mr. Charles Roberts, late resident medical officer to the York Dispensary, has been appointed House-Surgeon to the York County Hospital; and Mr. Fred. Norton Manning has been appointed Resident Medical Officer to the York Dispensary.

THE JOHN HUNTER STATUE.—The medical profession in this country will learn with satisfaction that Mr. South, the President of the Royal College of Surgeons, has received, through Dr. Bowditch, of Boston, U.S., £45, as a first instalment from the State of Massachusetts towards the statue. Mr. Weekes, the eminent sculptor, has already commenced his work.

THE TOMB OF HARVEY.—It has been determined by the College of Physicians, with the consent of the next of kin of the illustrious Discoverer of the Circulation, to restore his tomb at Hempstead Church in such a manner as to secure his remains from the desecration and destruction to which they are now exposed.

WESTMINSTER HOSPITAL.—The distribution of the certificates of honour, and silver medals and other prizes, awarded to the successful competitors at the annual examination, took place on Tuesday last in the board-room of the hospital. Lord Charles Russell, one of the vice-presidents, presided; and, after a few highly appropriate remarks, called forward the following gentlemen to receive the reward of their diligence and industry:—Mr. Fred. Little: certificate of general proficiency in the subjects of anatomy, physiology, chemistry, and materia medica.—Mr. Arthur W. Edis: certificate of honour and silver medal for general proficiency in the subjects of second year's study—anatomy, physiology, medicine, and surgery.—Mr. F. P. Edis: certificate of honour and silver medal for general proficiency in the subjects of first year's study—anatomy, physiology, chemistry, botany, and materia medica.—Mr. F. S. Edis: Mr. Holthouse's prize of a dissecting-case for prosections.—Mr. Wilson: special certificate for examination in anatomy; also a case of dental instruments by Mr. Clendon for proficiency in dental surgery.—Mr. Kempster and Mr. Wilson (equal): special certificate for examination in physiology.

TESTIMONIAL TO A SURGEON.—A circumstance highly honourable to the poor, and to their medical attendant, has recently occurred at Barnsley, a parish in the Cirencester Union, Gloucestershire. Mr. Iles, surgeon, having resigned his appointment, the inhabitants of Barnsley, whose respect he had won by his skilful and assiduous attention to them when sick, presented him with a proof of their gratitude in the form of a handsome ormolu clock, with the following inscription:—"To Albert Iles, Esq., M.R.C.S., from the parishioners of Barnsley, Gloucestershire, in grateful acknowledgment of his unceasing attention, kindness, and liberality to the poor, as medical officer of the Cirencester Union. June, 1860."

ANOTHER DEATH FROM A DISSECTING WOUND.—M. Dumay, demonstrator of anatomy at the dissecting-rooms of the Faculty of Paris, has just died in consequence of a slight wound received whilst demonstrating. The deceased was much esteemed as a teacher, and had been attached to the school for many years.

FEMALE PHARMACIENS.—Mrs. Mary Fajarde and Mrs. Caroline de Matos have lately obtained diplomas as pharmaceutists from the Medico-Chirurgical School of Lisbon. It would appear, according to the *Gazette Médicale*, that these ladies had already been admitted in the same capacity at Oporto in 1829.

LEAKAGE OF GAS.—At the last meeting of the City Commissioners of Sewers, the Committee reported that they had taken into consideration the letter of Dr. Letheby on the evils of gas leakage from street mains and pipes; and that, from communication with the gas companies, it appeared that the leakage was a source of great loss to them, but the remedies proposed were inadequate.

THE CAUSES OF DEATH.—Out of 100 deaths in England and Wales in 1858, the last year for which the causes of death have been examined, 25 were from zymotic diseases, 19 from constitutional diseases, 37 from local diseases, 16 from developmental diseases, and 3 from accidental or other violence. Zymotic diseases were exceedingly fatal, especially scarlatina, which, with its auxiliary diphtheria, caused 30,317 deaths. Small-pox and measles destroyed—the one 6,460 lives, the other 9271. Syphilitic diseases killed 1006 persons, above 700 of them infants, who receive it as their only inheritance. Want was recorded as the cause of death in 62 instances; but, observes Dr. Farr, in how many more was it the real, though unavowed, source, or support of fatal disease, it was impossible that register-books could reveal. Almost 1000 children died from want of breast milk; "alcoholism" destroyed 712 persons, the deaths of 288 being expressly referred to intemperance, and 424 more vaguely to delirium tremens. In the second class,—the constitutional,—which includes tubercular diseases, it is found that the rate of mortality from phthisis in London and in the Welsh division was nearly the same, though the two districts differ widely in important circumstances; but other pulmonary diseases—bronchitis, pneumonia, asthma, &c.—were more than three times as fatal in London as in Wales. In the third class—local diseases—there was a clear increase in affections of the brain, the heart, the lungs, and the kidneys; a very remarkable decrease in phlegmon. In the fourth class—developmental diseases—there was an increase in the deaths from old age, caused by the cold of winter. 3131 mothers died from childbearing—a considerable increase of mortality, supposed to be caused partly by the general unhealthiness of the year, and partly by privations occasioned by the distress resulting from the commercial crisis at the close of 1857. There were six diseases, each of which killed above 25,000 persons in the year—phthisis, 50,442; scarlatina, 30,317; bronchitis, 29,093; atrophy and debility, 26,860; pneumonia, 26,486; convulsions, 25,488 (children). Diseases are ranged in the Registrar-General's reports in 112 classes, or we might say groups, so many are the foes ever on the watch for us. Of the deaths in 1858, half were of persons under seventeen years of age; four out of ten were under five years of age. On the registers for the first quarter of the year being examined, it was found that 7275 persons died without any medical attendant to certify the cause of their death—six in 100 of the deaths. In Manchester, 181 persons out of 1755, the number who died in the quarter, had no medical attendance in their last illness; in Yorkshire, as many as 10 persons out of 100, and in the Welsh division at least 12 out of the same number.

ANNIVERSARY OF THE OPENING OF THE SUSSEX LUNATIC ASYLUM, HAYWARD'S HEATH.—On Wednesday, the 25th ult., the anniversary of the opening of the Asylum at Hayward's Heath was observed as a holiday by all the inmates and *employés* of the asylum. In spite of the many difficulties attending the opening of a new asylum, and getting it into working order, the whole year has happily passed without one untoward accident. The general health of the patients in the asylum is excellent, and has steadily been improving. The bracing air of Hayward's Heath, and the excellent dietary, have combined to produce this result; and for the rest the unremitting care of Dr. Robertson is to be cited as the chief cause of the satisfactory result attained. The numbers in the asylum have been steadily augmenting; and on the day of the anniversary there were 166 males and 205 females; total 371. This number, we understand, will shortly be further increased by the arrival of the patients belonging to the City of Chichester. The asylum was lately inspected by the Commissioners in Lunacy, who recorded their most favourable opinion of all the arrangements and of the management of the patients.

THE DUST NUISANCE ABATED.—Experiments have of late been undertaken at Lyons to allay the dust by keeping the streets in a kind of permanent moisture. The agent used is hydrochloric acid, which prevents the rising of the dust by forming chloride of calcium, a deliquescent salt. The method originated with the proprietor of a manufactory of chemicals, who perceived that a terrace of his always presented a moist surface.

SANITARIUM AT THE CAPE OF GOOD HOPE.—It has been finally resolved by the Indian authorities to institute a sanitarium at the Cape of Good Hope for invalid soldiers from India. This measure has been long debated, but, being resolved on, will be carried into execution without delay. Three hundred sappers are now undergoing a special course of instruction, with a view to fitting them for the necessary duties in connexion with the establishment of this extensive sanitarium. They will very shortly leave for the Cape of Good Hope.

AN AUTOPSY WITHOUT PERMISSION.—At the Southwark Police Court, on Tuesday, Mr. Barrow, solicitor, of Queen-street, Cheapside, applied for a summons against certain of the medical officers of Guy's Hospital, charging them with having proceeded to dissect the body of a patient named Deane against the express desire of his brother. The circumstance occurred at the commencement of the present year, but the delay was explained by the intervention of prolonged illness due to the unexpected sight of the dissected body. Mr. Barrow applied for a summons under the Dissection Act, alleging that it was clear that the body was unlawfully dissected. A correspondence between the hospital authorities and the Home Secretary was, however, laid before the magistrate, in which the hospital authorities explained that a mistake had occurred, and expressed their deep regret. The magistrate considered this apology to be sufficient.

HEALTH OF LONDON DURING THE WEEK ENDING SATURDAY, JULY 28TH.—The deaths in London were the same in number as those of the previous week, namely 975. The deaths have not reached a thousand in any of the four weeks of July except the second. The returns have lately shown a small increase in diarrhœa. The weekly deaths in July from this complaint were 12, 21, 32, and (last week) 52. Of these 52, all except 5 were those of young children; also two deaths of infants were referred to cholera. Diarrhœa and measles were fatal in almost equal degrees; for the latter disease carried off 53 children. Measles seems to prevail chiefly in the East districts, in which 24 cases were recorded. Fatal cases of small-pox have now declined to 7 in the week; there were 31 of scarlatina, and 4 of diphtheria. Three infants were murdered; a boy was suffocated on a brick-kiln; a young woman died of epilepsy from the habitual use of opium.

Last week the births of 917 boys and 868 girls, in all 1785 children, were registered in London. In the ten corresponding weeks of the years 1850–59 the average number was 1534.

Births, Marriages, and Deaths.

BIRTHS.

On the 26th ult., at Chaddesley Corbett, near Kidderminster, the wife of Dr. Fitch, of a son.

On the 27th ult., at Biggleswade, Bedfordshire, the wife of Chas. P. Stevens, Esq., F.R.C.S., of a daughter.

On the 30th ult., the wife of Geo. Ashdown, Esq., M.R.C.S., Northampton, of a son.

MARRIAGE.

On the 31st ult., at Hollycot, Lasswade, Dr. David Deas, C.B., &c., Inspector-General of Hospitals and Fleets, to Margaret, youngest daughter of the late Wm. Hepburn, Esq.

DEATHS.

On the 15th ult., at Malvern, Worcester, suddenly, F. Bell, Esq., M.R.C.S., of Aldborough, Suffolk.

On the 24th ult., at Northumberland-street, Edinburgh, Susanna Tennant, wife of Dr. Gairdner, F.R.C.S. Edin.

MEDICAL DIARY OF THE WEEK.

MONDAY, Aug. 6	Royal Free Hospital.—Operations, 2 P.M. Metropolitan Free Hospital.—Operations, 2 P.M.
TUESDAY, Aug. 7	Guy's Hospital.—Operations, 1½ P.M. Westminster Hospital.—Operations, 2 P.M.
WEDNESDAY, Aug. 8	Middlesex Hospital.—Operations, 1 P.M. St. Mary's Hospital.—Operations, 1 P.M. University College Hospital.—Operations, 2 P.M. Royal Orthopædic Hospital.—Operations, 2 P.M.
THURSDAY, Aug. 9	St. George's Hospital.—Operations, 1 P.M. Central London Ophthalmic Hospital.—Operations, 1 P.M. London Hospital.—Operations, 1½ P.M. Great Northern Hospital, King's Cross.—Operations, 2 P.M.
FRIDAY, Aug. 10	Westminster Ophthalmic Hospital.—Operations, 1½ P.M.
SATURDAY, Aug. 11	St. Thomas's Hospital.—Operations, 1 P.M. St. Bartholomew's Hospital.—Operations, 1½ P.M. King's College Hospital.—Operations, 1½ P.M. Charing-cross Hospital.—Operations, 2 P.M.